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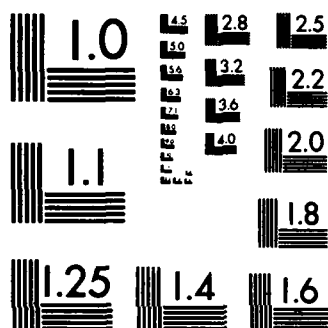
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**MITRE Technical Report
MTR-8032**

Conversion Plan for the Army Library, Pentagon

Joan S. Lovelace

November 1978

**Contract Sponsor: Computer Technology Branch
Lister Hill Center for Biomedical
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of Medicine
Contract No.: N01-LM-6-4753
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ABSTRACT

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The plan identifies three stages of conversion: the initial phase of preparation before the system comes up, Phase 2 which outlines the day-to-day operations and Phase 3 or retrospective conversion. The day-to-day operations include registering patrons, checking-out items without bar code labels, and checking-in serials. The retrospective conversion involves the creation of bibliographic records for items that have not been catalogued or that have not circulated. The objective of this last phase is to create an inventory of all items in the library,

The flow charts of procedures in this document have been developed in conjunction with Army Library staff and are subject to modification as the plan is implemented.

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1.0 THE CRITICAL NATURE OF CONVERSION

The success or failure of an automated library system may depend on the smoothness of its conversion process. If implementation results in errors, breakdowns, and confusion, confidence will be lost and even the best design may be scrapped. Horror stories about conversion are common among libraries that have converted from manual to automated circulation systems. Conversion is time-consuming and requires careful planning; yet it is not an impossible task. By identifying potential problem areas, simplifying procedures, and improving training methods and training manuals most of the pitfalls should be avoided.

Although this paper presents a conversion plan primarily for the Army Library, the problems and the alternatives discussed are integral to the implementation of this system. Therefore, Section 1.2 of this chapter discusses the design characteristics that have implications for conversion and Section 1.3 considers the conditions within the Army Library which have influenced the plan. Section 1.4 outlines the structure of the remainder of the report.

1.1 Lessons From History

Several lessons can be learned from studying previous experiences with automating circulation functions. The first is that the more records created prior to the system startup, the easier day-to-day operations will be. Secondly, if the library uses its machine-readable cataloging records, or accesses those records from another data base, conversion will be smoother and more error-free than if each record

must be keyed in. When records must be entered by keyboarding, the format should be short and simple enough to be entered by non-librarians. (Bucknell, for example, used college students; other libraries have used temporary CETA employees successfully.) It has also been recommended that data be entered directly from the item itself or that the shelf list be checked against the item in hand.

1.2 Design Factors

In addition to the usual control functions, the automated circulation module of the Integrated Library System (ILS) is designed to provide reference services and management information about the composition and use of the collection. Because of the reference function, a bibliographic record will carry additional information about publication, language, and subject. The content of a bibliographic record is shown in Table I, Cataloging Elements. The inclusion of subject headings makes it difficult for non-librarians to create bibliographic records since assigning subjects requires cataloging background; however, library technicians or other clerical personnel should be able to capture cataloging information from other data bases (OCLC, BNA, Ballots, etc.) and to create activity records for specific items when the bibliographic record exists in the data base.

Most automated systems do not provide for the circulation of periodicals. This design will accommodate both individual issues and bound volumes; furthermore, it will yield information on both the use of the title (Time Magazine) and the use of a specific issue (July 3, 1978 issue of Time). In designing the bibliographic record for the

TABLE 1

PENTAGON CATALOGING ELEMENTS*

OC/LC/ MARC	FIELD NAME	OC/LC/ MARC	FIELD NAME	OC/LC/ MARC	FIELD NAME
010	LC CARD #	400	SERIES STATEMENT -- PERSONAL NAME	630	SUBJECT HEADING -- UNIFORM TITLE
020	ISBN	410	SERIES STATEMENT -- CORPORATE	650	SUBJECT HEADING -- TOPICAL
040	CATALOGING SOURCE	411	SERIES STATEMENT -- CONFERENCE OR MTG.	651	SUBJECT HEADING -- GEOGRAPHIC NAME
041	LANGUAGES	440	SERIES STATEMENT -- TITLE	690	SUBJECT HEADING -- TOPICAL (LOCAL)
049	HOLDING LIBRARY CODE	490	SERIES NOTE	691	LOCAL SUBJECT HEADINGS (GEOGRAPHICAL)
051	LC CALL #				
051	COPY STATEMENT				
089	LOCAL DOCUMENT #				
090	LOCAL LC CALL #				
091	MICROFORM SHELF LOCATION				
099	LOCAL OR FREE TEXT CALL #				
100	MAIN ENTRY -- PERSONAL	500	GENERAL NOTE		
110	MAIN ENTRY -- CORPORATE	502	DISSERTATION NOTE	700	ADDED ENTRY -- PERSONAL NAME
111	MAIN ENTRY -- CONFERENCE	504	BIBLIOGRAPHY NOTE	710	ADDED ENTRY -- CORPORATE NAME
	OR MTG	505	CONTENTS NOTE	711	ADDED ENTRY -- CONFERENCE OR MTG.
130	MAIN ENTRY -- UNIFORM TITLE HEADING	506	LIMITED USE NOTES		
		515	NUMBERING PECULIARITIES	730	ADDED ENTRY -- UNIFORM TITLE HEADING
		520	ABSTRACT NOTES	740	ADDED ENTRY -- TITLE TRACED DIFFERENTLY
		525	SUPPLEMENT NOTE		
		530	ADDITIONAL PHYSICAL FORMS	760	MAIN SERIES ENTRY(S)
		546	LANGUAGE	765	ORIGINAL LANGUAGE ENTRY (S)
		547	FORMER TITLE COMPLEXITY NOTE	767	TRANSLATION ENTRY(S)
222	KEY TITLE			770	SUPPLEMENT SPECIAL ISSUE ENTRY(S)
240	UNIFORM TITLE	550	ISSUING BODIES NOTES		
241	ROMANIZED TITLE	555	CUMULATIVE INDEX NOTE		
245	TITLE STATEMENT	570	EDITOR NOTE	800	SERIES ADDED ENTRY -- PERSONAL
246	VARYING FORMS OF TITLE	580	LINKING ENTRY		
247	FORMER TITLES	590	LOCAL NOTE	810	SERIES ADDED ENTRY -- CORPORATE
250	EDITION STATEMENT			811	SERIES ADDED ENTRY -- CONFERENCE
260	IMPRINT	600	SUBJECT HEADING --		
			PERSONAL NAME	830	SERIES ADDED ENTRY -- UNIFORM TITLE
300	COLLATION	610	SUBJECT HEADING -- CORPORATE		
362	DATES OF PUBLICATION AND VOL., DESIG.	611	SUBJECT HEADING -- CONF. OR MTG.		

* Any of these may be selected from the archival tape for the bibliographic record.

title, the requirements of a serials control module were examined. A full scale serials control system which would predict arrival dates, and generate claims notices is beyond the scope of this project. However, the bibliographic record includes the necessary information to serve as a serial master record and the process of assigning bar code labels has been incorporated into a serial check-in system.

The inclusion of serials check-in has made conversion of bibliographic records for periodical titles a high priority project. It has influenced the structure of the bar code for serials and necessitated different procedures from those designed for handling monographs. Therefore, serials record entry and labeling procedure will be discussed separately throughout this plan.

A third design feature is the inclusion of a bar code printer. The presence of this printer means that labels can be produced in-house rather than be supplied by a vendor. The availability of the printer makes it possible to code information about the patron or the item into a bar-coded ID number. This ID number will be generated by a computer program that will analyze specific elements in a record and assign the appropriate code. Although there are definite benefits to having the ID carry information, it means that such a number can not be generated for either an item or a patron until a record has been created. Consequently the emphasis for conversion has been placed on the creation of bibliographic records, particularly for those monographs that are currently circulating, prior to the system start up.

1.3 Characteristics of the Army Library

The Army Library serves both military and civilian employees at the Pentagon. It provides interlibrary loan service to Army, Federal, contractor, and other libraries. The collection consists of over 280,000 books, 1 million documents, and 2000 periodical titles. The library has an excellent law collection which includes state laws and an extensive collection of committee hearings, as well as works on Federal and military law.

The general collection is classified according to Library of Congress with the exception of the law section which uses its own classification scheme. Military documents are handled by a separate section of the library and will not be included in this automation effort.

Circulation is estimated at 400 items per day; circulation of periodicals accounts for 50% of this figure. Materials in history, social and political science, science and technology, and military and naval science are used most frequently. These patterns of usage have been taken into consideration by the conversion plan, particularly in the schedule for Phase 1.

1.4 Phases of Conversion

In the best of all possible worlds the bibliographic and activity records for all the items in the library would be created prior to implementing the system. Every item would be accurately labeled and every patron would have an ID card. However, the nature of funding

for the Army Library requires that the system be running before any additional funds for conversion are committed. The conversion plan allows for this by identifying critical areas for the initial stages of preparation (Phase 1), developing procedures for the Phase 2 day-to-day operations, and suggesting an approach to Phase 3 - retrospective conversion. It should be noted that both Phase 2 and retrospective conversion are long-term activities and may take place concurrently. Each phase of the conversion process is addressed in following chapters. Although training is a part of each phase of conversion, it will be discussed separately.

2.0 PHASE ONE - INITIAL PREPARATION

Phase One conversion for the Integrated Library System (ILS) involves the following activities:

- work station identification;
- site preparation;
- data base creation; and
- labeling.

This chapter will discuss each of these activities. Although the preparation of manuals and training methods will take place during this phase, it will be considered separately in Chapter 5.

2.1 Workstation Identification and Terminal Assignment

In addition to the circulation desk, there are several other sections of the library that will either be creating records or accessing the bibliographic records for their patrons. The task of workstation identification involves 1) determining the areas of the library that would be interacting with the system and the specific functions that would be performed there; and 2) on the basis of those functions assigning terminals to a specific location within that area.

2.1.1 Workstations

Table II, Workstations and Their Functions, summarizes the workstations which have been identified. They are: circulation, reference, law reference, periodicals and cataloging. In addition, there is the computer center itself.

TABLE II

WORK STATIONS AND FUNCTIONS

WORK STATION	FUNCTIONS
Circulation	Circulation Functions Patron Record Entry Search
Reference	Searching Input Daily Reference Activity
Periodicals	Record Entry - Serials Check-In
Law	Searching
Computer Room	System Control Report Generation *
Cataloging	Search Data Base for Existing Records Verification/Edit Record Entry of Circulating Items

*Optional

One of the functions performed is searching the data base, which may be done by any work station. The reference sections can use this capability to find title or author information or to locate material on a specific subject. Circulation may need to check and change the status of an item. The cataloging section searches to see if a bibliographic record exists before creating a new one.

Record creation is primarily the function of cataloging. They will be creating the bibliographic records for titles not catalogued through OCLC (Ohio College Library Center). When a bibliographic record for a title is present in the data base, additional information must be entered to create an activity records for each copy. The circulation section will be responsible for creating patron records. In addition, the periodicals section will be building the serials file.

Editing is a major task for the cataloging section. Cataloging must verify records captured from OCLC and modifying them as needed. Changes of address, telephone numbers, and other such items must be added to patron records. The periodicals section will update holdings records.

Two other functions require explanation. In order to collect information for the monthly statistics, the reference librarians will enter a daily tally of their activities on a special input screen. The information will be cumulated daily, weekly, and monthly. There is also a system control function. Depending on their skills and assigned tasks, some library workers may not be permitted to create

or edit records. Control of passwords and access to files and to programs will be maintained by a terminal designated for system control.

Report generation may be included as a feature of the system. The capability of determining what data will appear in a report, and in what format, should be restricted to the library director or system monitor. The computer room is to be considered the work station for the library administration.

2.1.2 Terminal Assignments

Two types of terminals will be used by the Army Library - one Hewlett-Packard and six teletype terminals which were made available to the Army Library. The capabilities of the terminals are different. Of the two, only the Hewlett-Packard is capable of block data entry and allows easy editing. Since several sections of the library must enter data or edit, the following alternatives were considered:

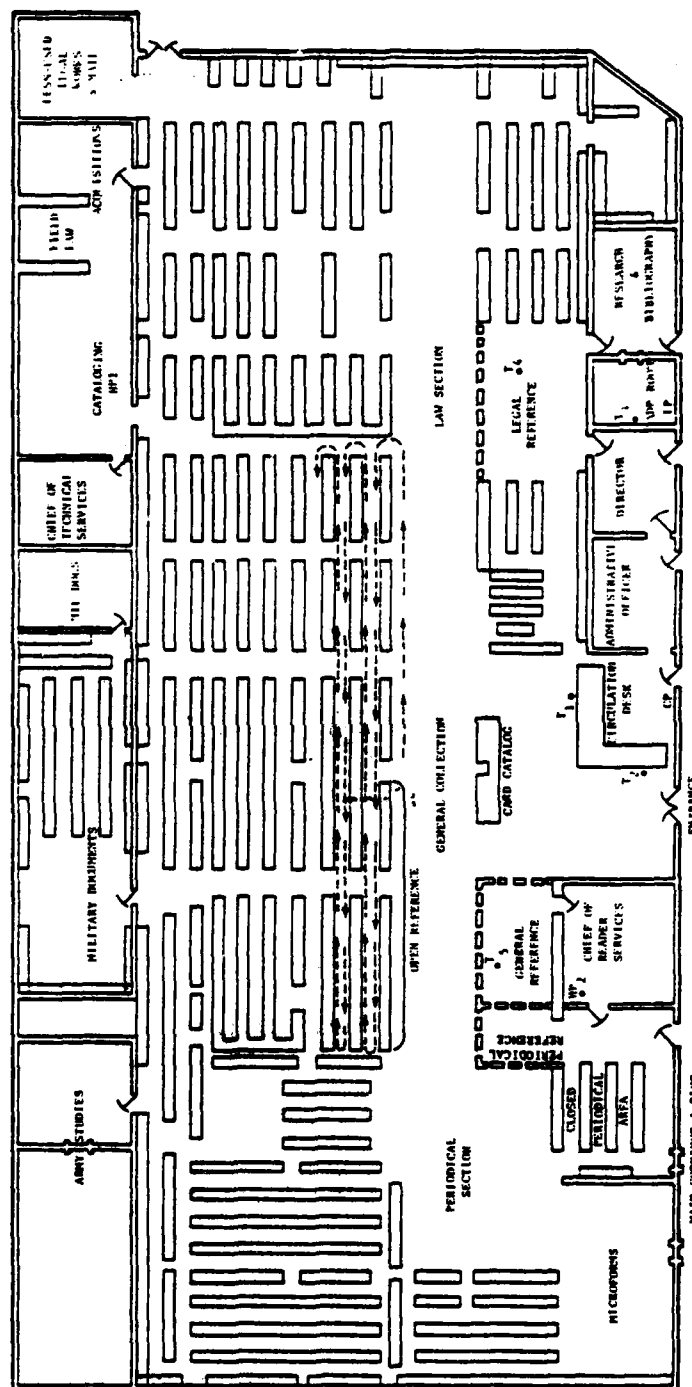
- locate the H-P terminal so that it could be used by all the staff;
- adapt one of the teletype terminals to improve entry capabilities; or
- purchase at least one additional Hewlett-Packard terminal.

2.1.2.1 Locating the H-P Terminal. Three candidate locations for the H-P terminal were explored: cataloging, periodicals, and the computer room. The possibility of a neutral location was also examined. The advantages and disadvantages of each location is discussed below.

2.1.2.1.1 Computer Room. There would be several advantages to locating the Hewlett-Packard terminal in the computer room. First, it is out of the main traffic in the library. The room is well lighted, air conditioned and uncrowded. It is equally inconvenient for everyone.

The disadvantages, however, are considerable. The cataloging staff requires access to both a terminal and their shelf list for the creation of records. The shelf list is contained in a wooden cabinet in the Cataloging Department on the other side of the library. (See Figure 1). The Periodicals Section requires a three hour block for check-in of periodicals. The cart of periodicals received that day must be sorted, loaded on a cart, records created, items labeled and then returned to Periodicals. The Reference librarians and staff creating patron records would be inconvenienced, but the location would not be impossible for them. The greatest disadvantage is that between 10-15 people would be using a room to which minimum access should be given.

2.1.2.1.2 Cataloging Section. The cataloging section is a logical location for a Hewlett-Packard terminal since most of the record creation and editing takes place in this area. It is inconvenient for periodicals check-in, as discussed above. Furthermore, the section would need to be rearranged to create a work space not located in the traffic pattern.



WP - MOULET-PACKARD TERMINAL
T - TELETYP TERMINAL

FIGURE 1
FLOOR PLAN
THE ARMY LIBRARY (PENTAGON)
ROOM 1A-16

2.1.2.1.3 Periodicals Section. This actually is a private office for the Director of Readers' Services. It is a room whose dimensions are 18 x 22 feet. Approximately one-fourth of the space is used for the serials check-in and control. There is a separate door leading to the reference section. It is a good location for everyone except the cataloging staff. However, as a private office it would not be accessible at all times.

2.1.2.1.4 A Neutral Location. It might be possible to create a "neutral" space devoted solely to data entry. The library is scheduled to be remodeled. Neither the extent of this remodeling nor the timing is known. If periodicals and cataloging were adjacent they might be able to share one terminal. Such an arrangement, however, does not follow usual library practices. Furthermore, a major renovation could not be made before the system is to be implemented.

2.1.2.2 Adapting the Teletype Terminal. Additional entry and editing capability could be provided by modifying one of the teletype terminals. The modifications would take several weeks and would require additional software.

2.1.2.3 Purchase of an Additional H-P Terminal. The list price of a H-P terminal is \$4,726.29. The actual price for the terminal already purchased was \$3,789.01.

Because the data entry capabilities are required by all sections of the library and because no one location could support all the staff

of work that needs to be done, it has been recommended that an additional H-P terminal be purchased.

On the assumption that an additional Hewlett-Packard terminal will be purchased or leased for the Army Library, the following terminal assignments have been made:

- 2 teletype terminals at the Circulation desk,
- 1 teletype terminal in the computer room,
- 1 teletype terminal in reference,
- 1 teletype terminal in law reference;
- 1 Hewlett-Packard in cataloging: and
- 1 Hewlett-Packard in periodicals.

The teletype terminal in the computer room may require some modification in order to function as the system control monitor. The floor plan of the Army Library showing the workstation and the terminals assigned to each is shown in Figure 1.

2.1.3 Location of Terminals

Figures 2 through 7 show the proposed location of each terminal within each workstation.

2.1.4 Location of the Bar Code Printer

It was also necessary to determine a location for the bar code printer. Labeling of patron cards and circulating books will be done by the circulation staff. Beginning with the new year the periodicals check-in person will label individual issues. The machine is fairly small, but somewhat noisy. For that reason it has been located in

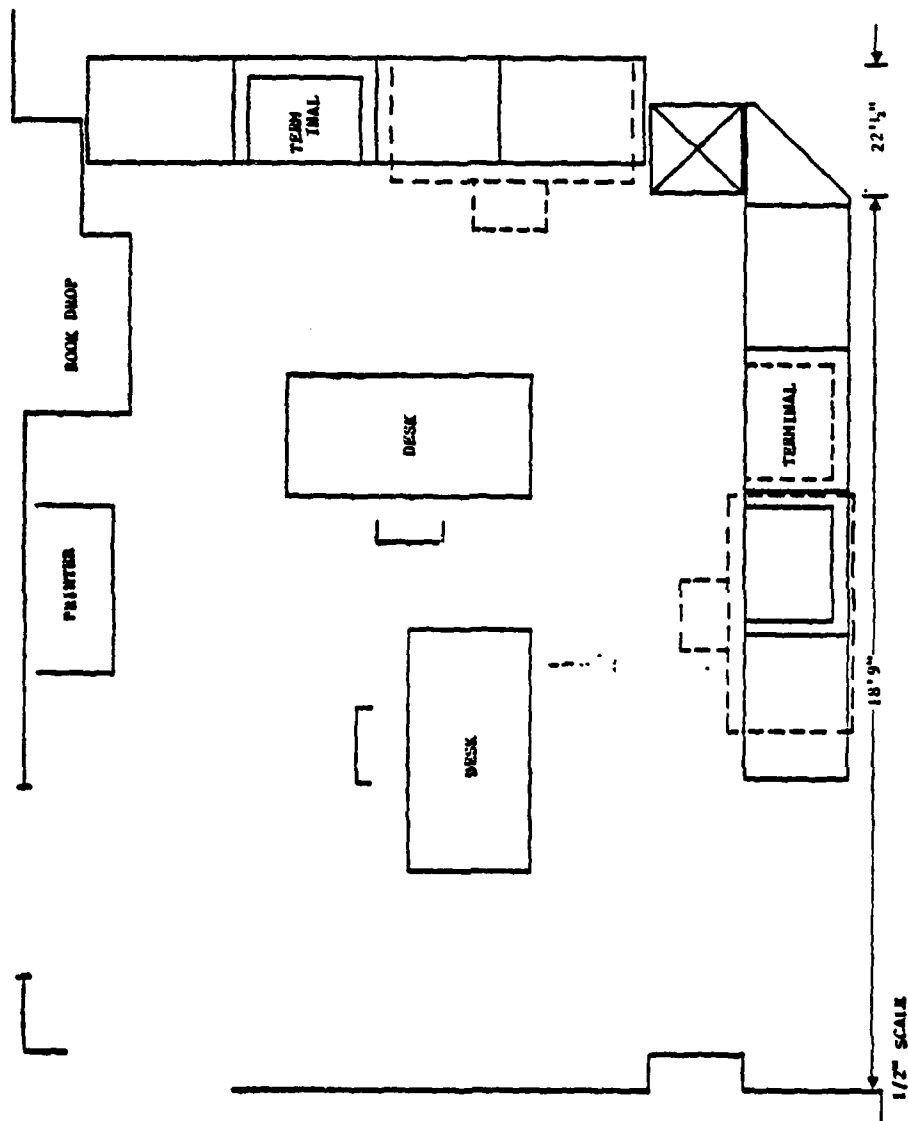


FIGURE 2
FLOOR PLAN OF THE CIRCULATION AREA

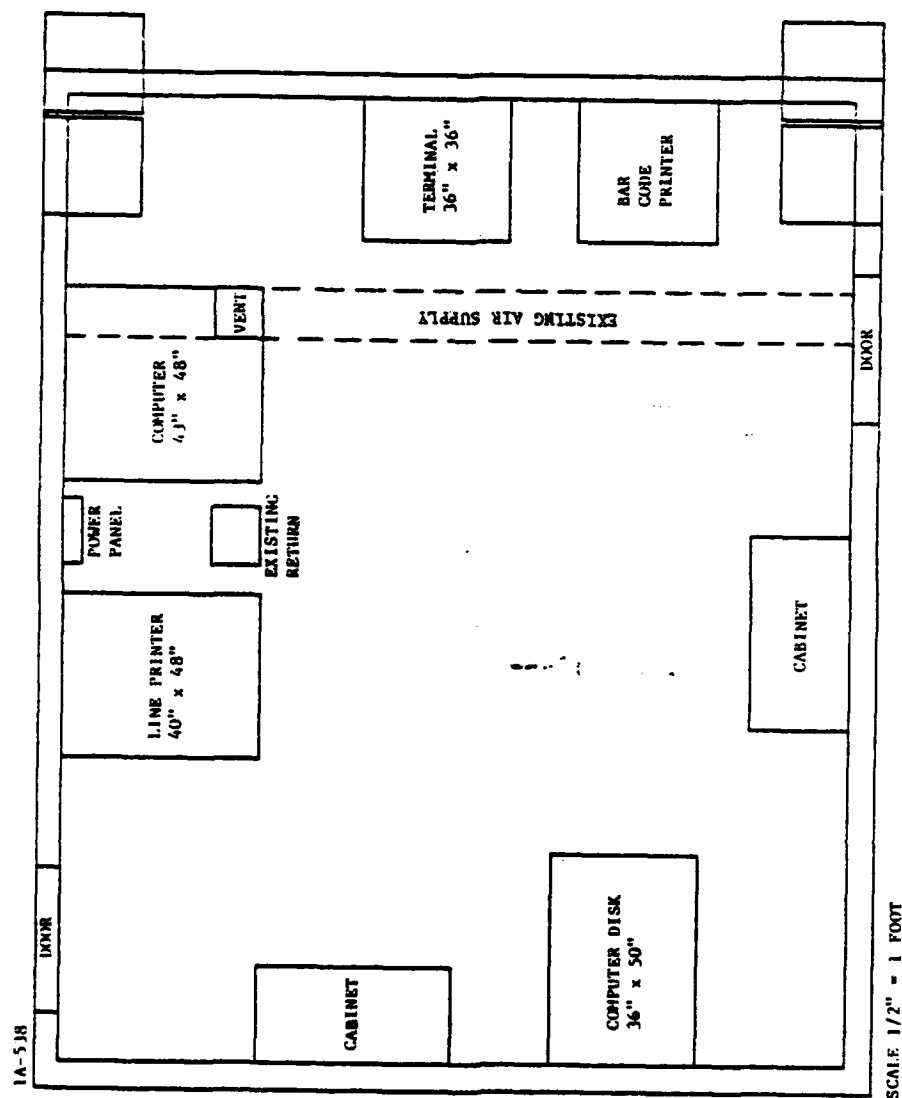


FIGURE 3
FLOOR PLAN OF THE COMPUTER ROOM, ARMY LIBRARY

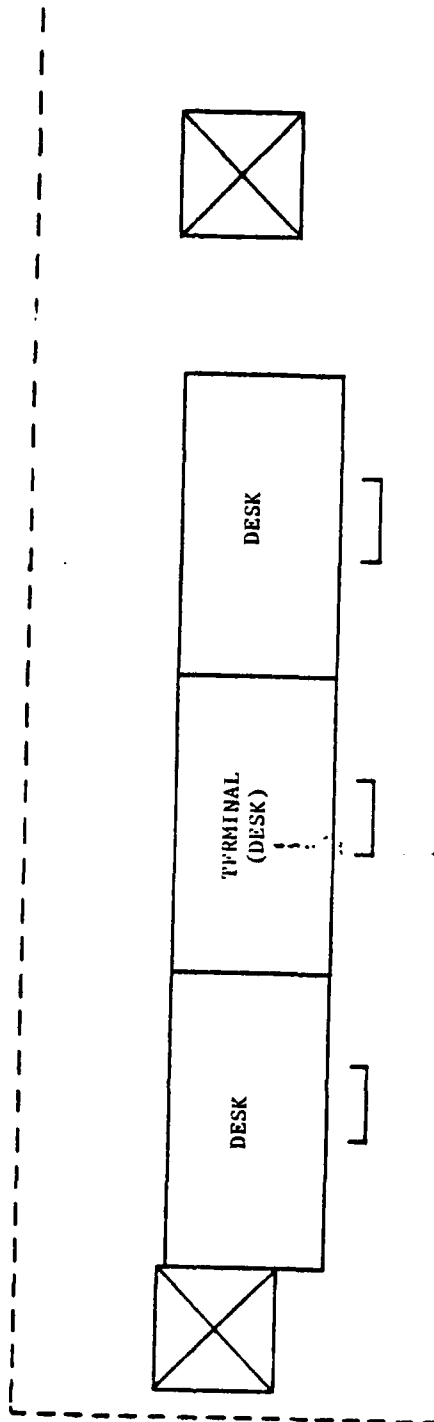


FIGURE 4
LOCATION OF TERMINAL IN REFERENCE SECTION

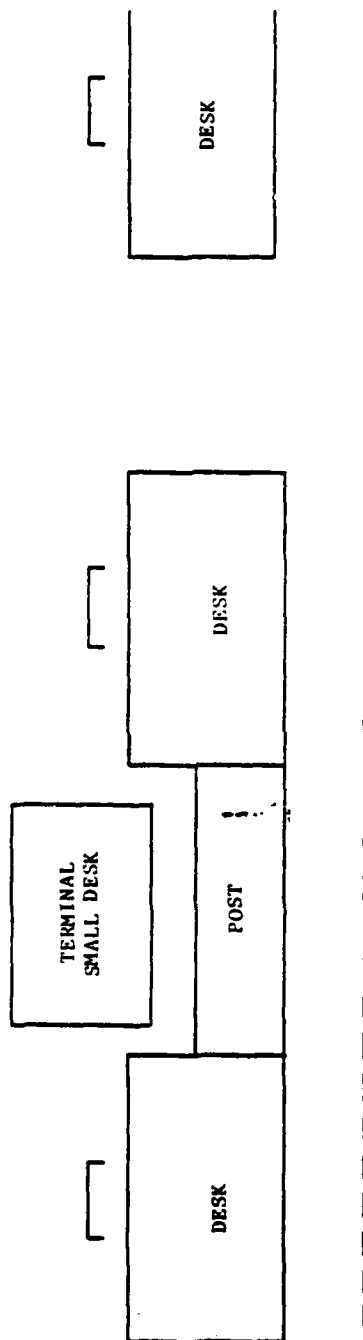


FIGURE 5
LOCATION OF TERMINAL IN THE LAW REFERENCE SECTION

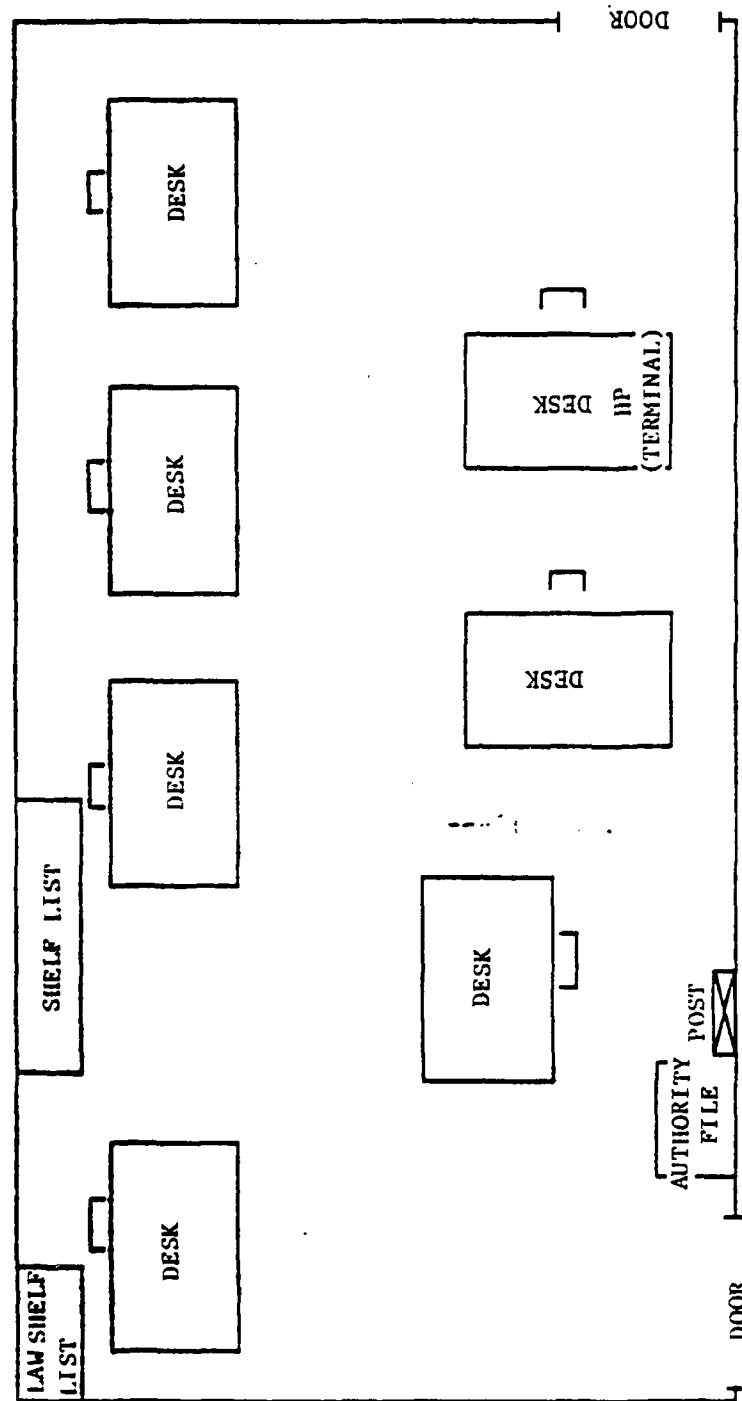


FIGURE 6
LOCATION OF TERMINAL IN CATALOGING
(NOT DRAWN TO SCALE)

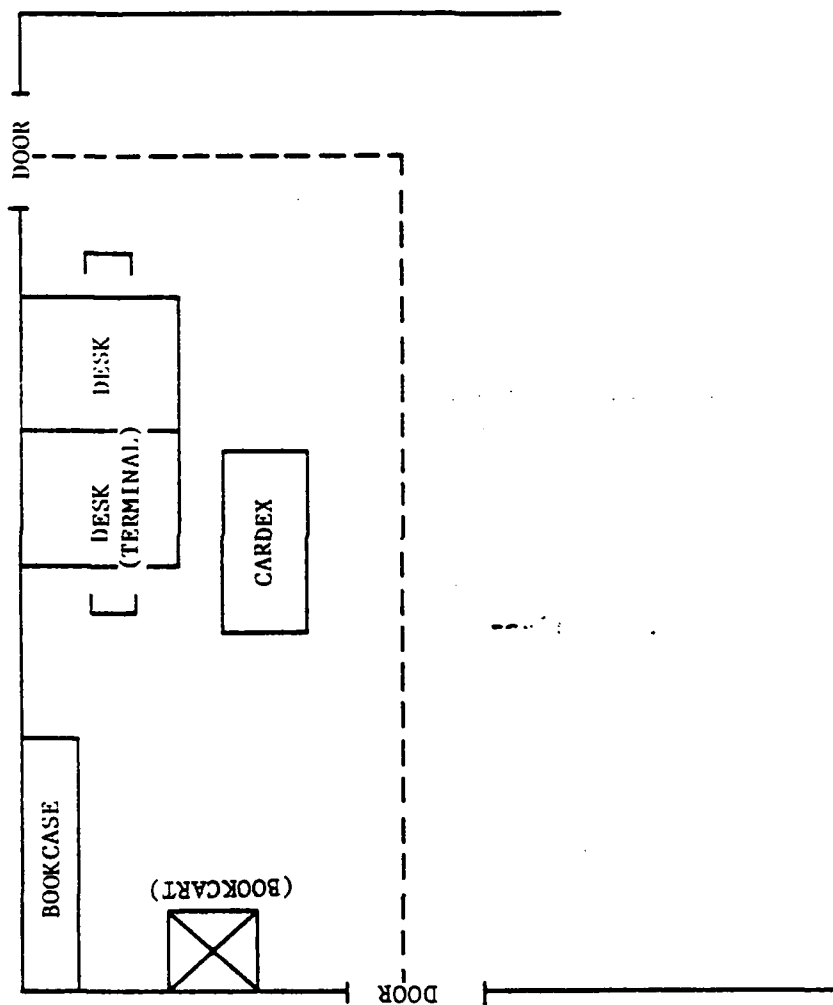


FIGURE 7
LAYOUT OF PERIODICALS CHECK-IN AREA

the computer room which has acoustical tile and carpeting. Labels will be produced in batches, torn off and placed in boxes next to the door marked "Circulation," "Patrons," or "Periodicals."

2.1.5 Location of the Centronics Printer

The Army Library possesses a Centronics printer which will be located in the circulation area to print receipts, reserve notices, and, depending on the volume, overdue notices. (The bulk of the reports will continue to be produced by the line printer in the computer room). A similar machine is currently used in the reference section and is somewhat noisy. Covers are being ordered for both machines to deaden the noise.

2.2 Site Preparation

Each of the identified workstations will require some site preparation. In the case of law reference and reference, it is simply a matter of finding a surface for the terminal. The computer room, however, requires special flooring and upgraded air-conditioning. Furniture must be rearranged in the periodicals room and at the circulation desk. Each of the major sites is discussed below.

2.2.1 The Computer Room

Room 1A523, currently being used as a storeroom and lounge area, will be redesigned to accommodate a minicomputer and peripheral equipment. The site plans were drafted by the NLM project director and have been submitted. The modifications to this room include the installation of the following:

- a rigid grid floor nine inches above the present level with anti-static carpeted floor panels;
- a sprinkler system with Grinnell Aquamatic sprinkler heads;
- an air conditioning unit to dissipate a heat load of 20,000 BTUs;
- dedicated electrical circuits (230 V at 50 amps with the circuit split into two 115 V busses internal to the computer cabinet and two 208 3-phase breakers at 20 amps each.);
- acoustical tiles on the ceiling; and
- a smoke detection system.

It is estimated that site modifications could be completed within one work week.

2.2.2 Circulation Desk

There will be one desk removed from the circulation desk area. The Centronics printer will be located in its place. At a later time the library may replace parts of the modular desk with sections that will better accommodate the terminals.

2.2.3 Periodicals Room

Two large desks will be removed from this room. One will be replaced by a smaller desk and the other with a terminal placed on a small table. The movable Cardex file will remain until the first of the year when it will no longer be needed.

2.2.4 Cataloging Section

One typewriter currently linked to the OCLC terminal, which is used to produce spine labels, will be reassigned. Other modifications to the present arrangement are minor.

2.3 Creating the Data Base

Phase One of conversion concentrates on processing the Army Library's archival tapes from OCLC and its serials tape to produce bibliographic records, and on registering patrons. A third type of record - the item activity record - should be created when the bar-coded label can be attached to a circulation item.

2.3.1 Creating Patron Records and Cards

Before the Army Library can create patron records it is necessary to identify the information to be collected in compliance with the Privacy Act provisions. Information contained in patron records will be collected and maintained in compliance with Privacy Act provisions. Registration and procedures for creating patron records are discussed further below.

2.3.1.1 Registration. There are two types of patrons who will be registered during this phase - Pentagon employees and libraries that participate in interlibrary loan. The Army Library plans to send out a letter to libraries that participate in interlibrary loan that will include the registration form shown in Figure 8. The important data are contract numbers (for contractor libraries), expiration dates, and the contact person for interlibrary loan.

Registration of Pentagon personnel will be part of a general publicity campaign about the new circulation system. A brochure has been designed to explain the advantage of the new system. Registration will commence soon after these are distributed. A sample registration form is shown in Figure 9.

INSTITUTION REGISTRATION
(PLEASE TYPE OR PRINT)

INSTITUTION NAME _____

ADDRESS _____

TELEPHONE (INCL AREA CODE) _____ AUTOVON _____

POINT OF CONTACT (UP TO THREE NAMES) _____

CONTRACTOR (CHECK) ☐

CONTRACT NO. _____ EXPIRATION DATE _____

DATE _____ SIGNATURE _____

FIGURE 8
REGISTRATION FORM FOR LIBRARIES

PATRON REGISTRATION
(PLEASE PRINT)

NAME _____

RANK/CS _____ TITLE PREFERENCE IF CIVILIAN (DR/SEC/MS/ETC) _____

AFFILIATION ARMY ☐ NAVY ☐ AIR FORCE ☐ MARINE CORPS ☐
CIVILIAN ☐ OTHER ☐

ORGANIZATION OSD ☐ ARMY ☐ NAVY ☐ AIR FORCE ☐ JCS ☐
MARINE CORPS ☐ CIVILIAN ☐ OTHER _____

OFFICE SYMBOL _____ ROOM NUMBER _____ TELEPHONE _____

RETIRED MILITARY (CHECK) ☐ SERVICE BRANCH _____ RANK _____

HOME ADDRESS _____ HOME TELEPHONE _____
STREET _____

CITY _____ STATE _____ ZIP _____

ASSIGNED STUDENT (CHECK) ☐ SERVICE BRANCH _____ RANK _____

SCHOOL AFFILIATION _____ COMPLETION DATE _____

HOME ADDRESS _____ HOME TELEPHONE _____
STREET _____

CITY _____ STATE _____ ZIP _____ PENTAGON TELEPHONE _____

DATE _____ SIGNATURE _____ IS THIS
NEW REGISTRATION REPLACEMENT

FIGURE 9
REGISTRATION FORM FOR REGULAR BORROWERS

2.3.1.2 Patron Records. The information on patrons will have to be manually entered using the Hewlett-Packard terminal. For ease of entry, an input screen patterned on the registration form should be devised. Circulation desk personnel and administrative personnel will be used to enter these records. Figure 10 is a flow chart showing the steps in the creation of the patron's card. Each of the steps is broken down further in Figures 11 through 13.

In the Verification process the work file which holds the records until they can be processed for labels will be called up. The reviewer should have the option of getting either a printout or of viewing the file on the screen. The record will be checked for completeness and for obvious misspellings. These are to be edited and the file submitted for label processing.

2.3.2 Bibliographic Records

Bibliographic records contain cataloging information about a title, but not a specific item. For example, although a classification number may be given to a title by the Library of Congress, the call number (which is a combination of the LC number, a unique Cutter number, and volume or copy number) is unique to the item. There are three ways in which a bibliographic record can be created:

- processing of OCLC tapes;
- processing of the Army serial tape; or
- keying in the information.

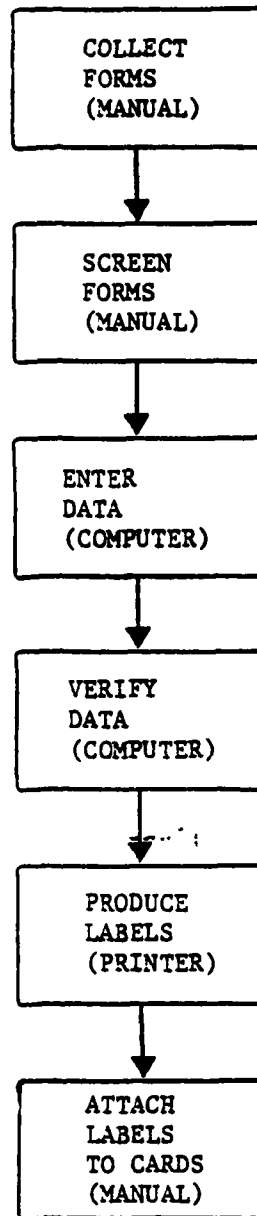


FIGURE 10
FLOWCHART SHOWING PROCESS OF CREATING PATRON CARDS

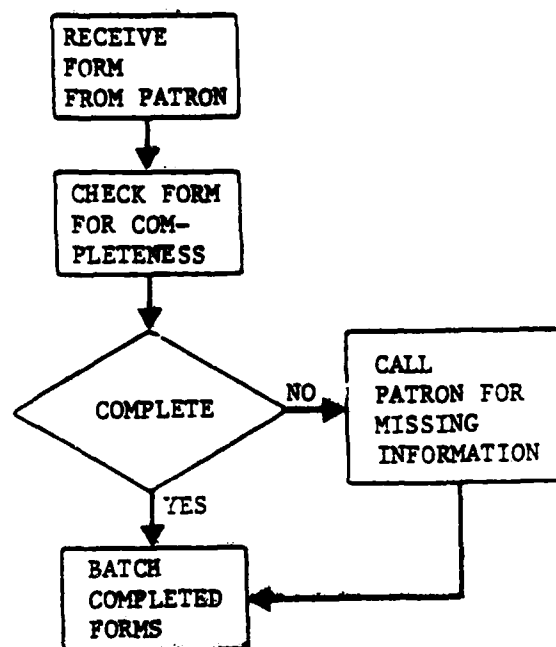


FIGURE 11
FLOWCHART SHOWING INITIAL SCREENING OF PATRON
REGISTRATION FORMS

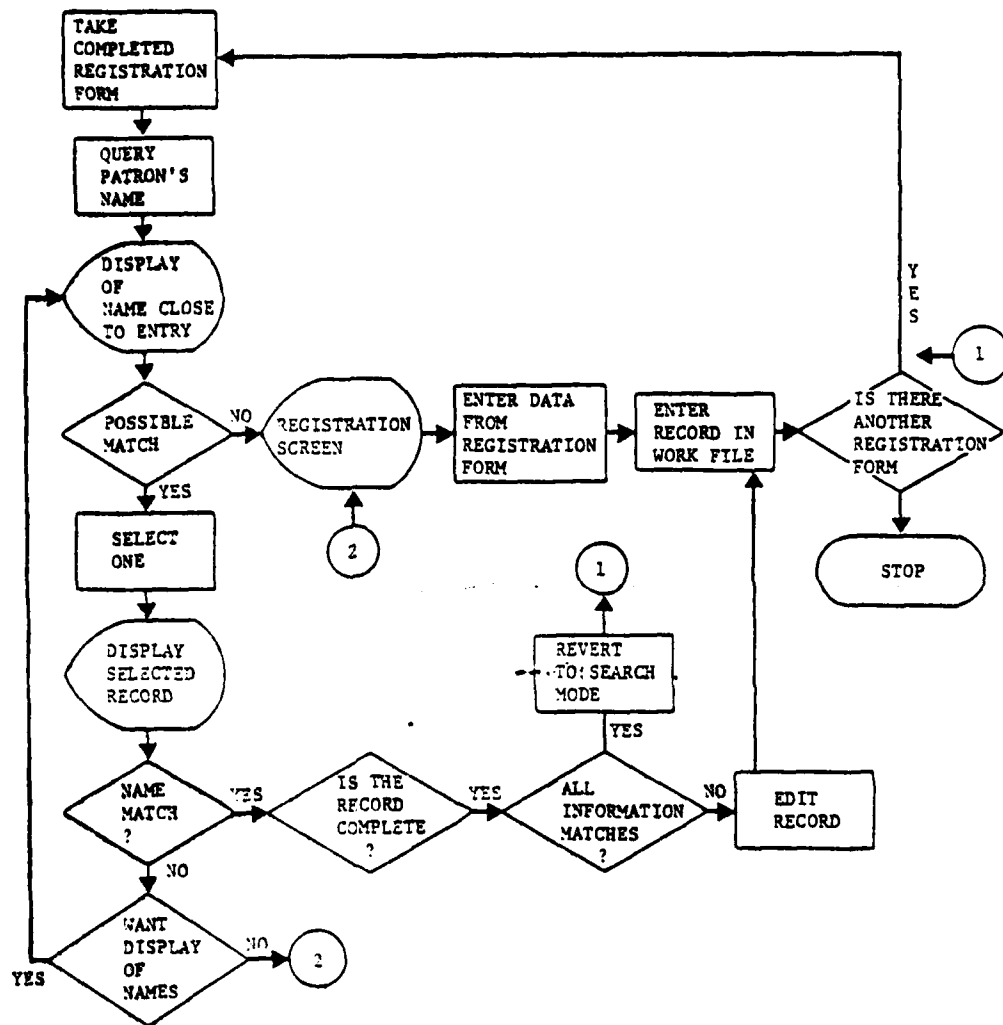


FIGURE 12
FLOWCHART SHOWING CREATION OF PATRON RECORD

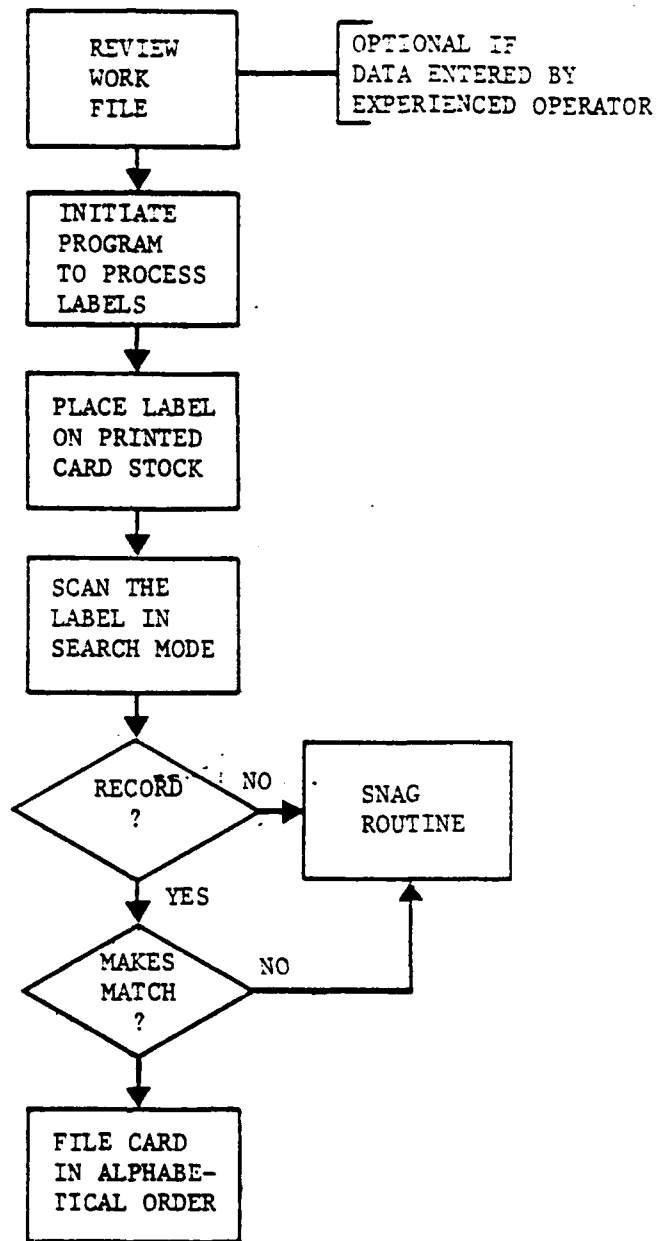


FIGURE 13
FLOWCHART OF LABEL PROCESSING FOR PATRON CARDS

2.3.2.1 Processing the OCLC Tapes. Approximately 10,000 titles in the Army Library have been catalogued through OCLC and are available in machine-readable form on the library's archival tapes. There are seven tapes each with a varying number of records. The Lister Hill Center has developed the processing algorithms. This conversion plan, therefore, is concerned only with the procedures (Figure 14).

Archival tapes from OCLC contain various types of records. The most common is catalogued monographs; however, changes to previous records or deletions from holdings may also be on the tape. Corrections include spelling or typing errors, which can be important if in a title or author's name, and incorrect subject headings. These incorrect headings reflect changes in LC subject headings that have been made subsequent to the record's creation. For example, LC once used the subject heading "Negroes" and now uses "Afro-Americans" in its place. To process a tape it is necessary to first identify the type of record to be captured (i.e., monographs). The second step is to select the appropriate tags for the fields and subfields that are desired for the bibliographic record. These tags are the same as those used by the cataloguers when entering MARC records and may be selected from a menu. (See Table I.)

The processed tape will result in two work files: one for the bibliographic records and one for subject headings. Both will need to be verified. The subject headings will be checked against the authority file and LC subject headings list and supplements

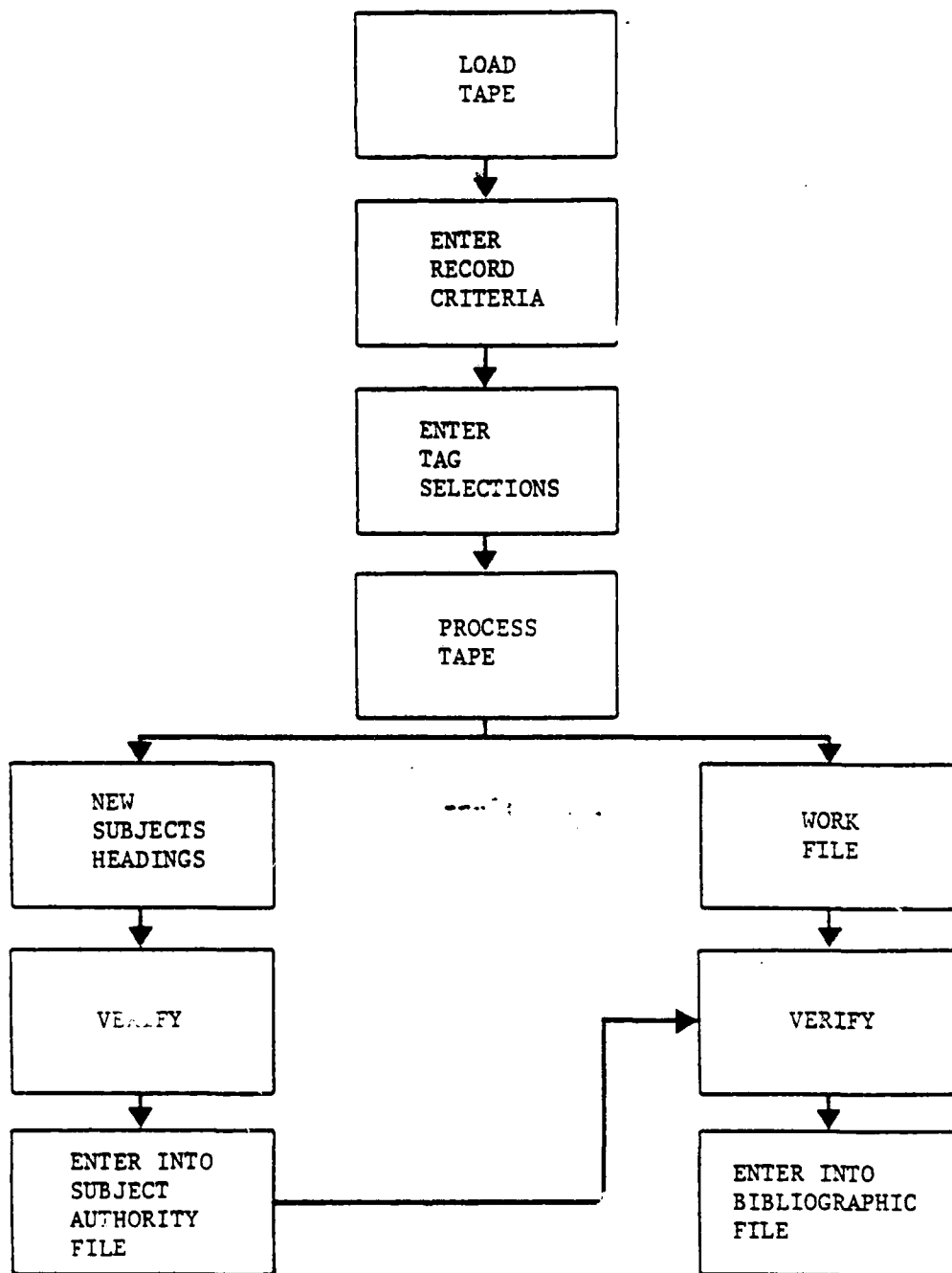


FIGURE 14
FLOWCHART OF OCLC TAPE PROCESSING

now maintained manually. If any out-of-date headings occur, they will be changed. After the file has been checked and edited, the subjects can be added to the computer authority file. As subsequent tapes are run, only subject heading that have not appeared will be extracted from the records to be checked. Verification of the bibliographic records involves modifications of subject headings (if necessary) and a check for completeness and spelling errors. After checking, a record is entered into the main bibliographic file.

2.3.2.2 The Army Library Serials Tape. Although some serials like Jane's Weapons of the world are catalogued through OCLC, periodicals are not well represented. The Army Library will create its bibliographic record from a tape of serial holdings. Table III compares the data elements on the serials tape with the elements needed for the main record. The ISSN (International Standard Serials Number) is the only important element missing from the tape.

As discussed in Section 1.2, the bibliographic record will also serve serials master record for a serials control module. Table IV compares the elements on the serials tape with the recommended elements for a serials master record. The Army Library will use its computer center to add ISSNs and Codens wherever they have been assigned. A program for processing the tape will be written by NLM; and, if acquisition of the Army Library's computer is delayed, the tape may be processed on the NLM computer to create bibliographic records for periodical titles.

TABLE III
COMPARISON OF DATA ELEMENTS IN THE BIBLIOGRAPHIC
RECORD AND IN THE ARMY SERIAL TAPE

ELEMENT	BIBLIOGRAPHIC RECORD	SERIAL TAPE
LC Card #	X	
ISSN	X	
Local Call Number	X	
Author	N/A	
Title	X	X
Date of Publication	X(start date)	
Serial Statement		
Subject Heading	X	X
ID Number		X
Cross References		X
Frequency of Publication		X
Indexing		X
Holdings Statement		X

TABLE IV
COMPARISON OF DATA ELEMENTS ON SERIALS TAPE
WITH THOSE OF SUGGESTED MASTER SERIALS RECORD

DATA ELEMENT	ARMY LIBRARY SERIALS TAPE	SWIHART* & HEFLEY	BECKER & HAYES
ID Number	X	X	
Call Number		X ²	
CODEN		X ²	
Title in English	X	X	X
"See References"	X	X	X
Foreign Lang Title	X ¹	X	X
Frequency	X	X	
Indexing	X	X ²	X
Subject Headings	X		X
Holdings Statement	X	X ²	X
ISSN			

¹Army Lib does not translate

²Not part of "descriptive information"

* Hayes, Robert and Joseph Becker. Handbook of Data Processing for Libraries. 2nd ed. (Los Angeles: Melville Publishing Company, 1970).

** Swihart, Stanley and Beryl F. Hefley. Computer Systems in the Library (Los Angeles: Melville Publishing Company).

2.3.2.3 Screen Entry. Figure 15 shows an entry screen for bibliographic records. Information must be entered from the shelf list card because it will contain the subject heading. It is to be used only for items that have been catalogued, or for which OCLC cataloging is not necessary.

In Phase 2 conversion this method might be used to create records for catalogued books returned to the circulation desk whose records are not in OCLC.

2.3.3 Activity Records

Activity records are linked to the bibliographic or title record and identify a specific copy or volume. To create an activity record there should be an existing bibliographic record and the item should be in hand. The operator using a screen format will key in the call number, the volume or part, the type of record (monograph, reference, etc), whether it is a circulating copy, language, etc. Figure 16 illustrates the process of creating an activity record.

After activity records have been created, the work file may be checked and label processing begun. Because the bar code labels will be printed in the order in which activity records are used, items should be kept in the order in which their records were created.

Where several volumes or copies of the same title exist, it will be possible to save the first set of information and to create additional activity records by editing the call number, volume number, or part.

(WITHHELD BY SPONSOR)

FIGURE 15
SCREEN FOR BIBLIOGRAPHIC RECORD

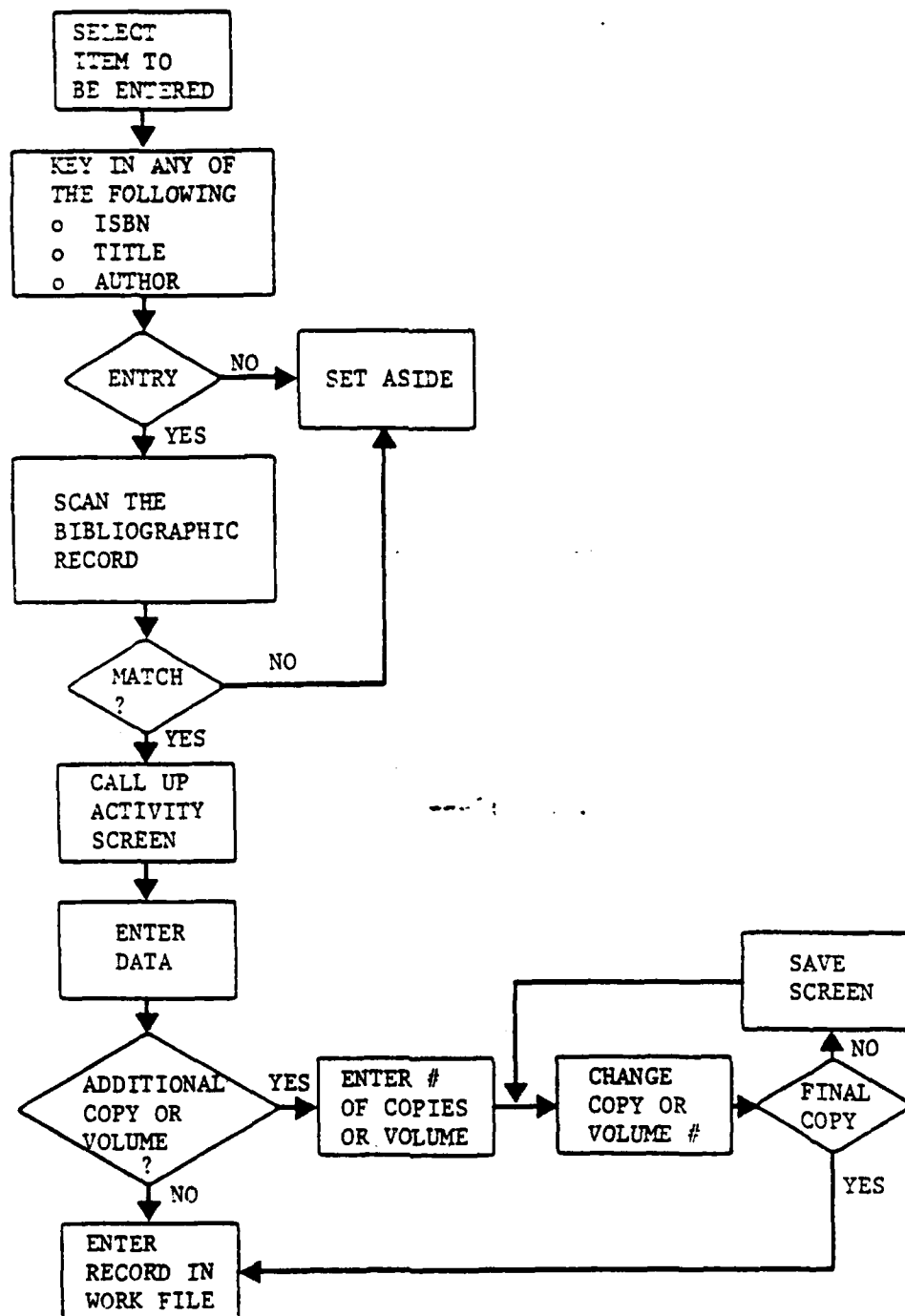


FIGURE 16
FLOWCHART OF THE PROCESS OF CREATING AN ACTIVITY RECORD

2.4 Labeling

To produce a label the record (patron or activity) will be scanned, and a number comprised of coded and uncoded characters will be transmitted to the bar code printer for printing. At the same time, the item number is added to the record that has been scanned. Three types of items require labels - patron cards, monographs, and periodicals.

2.4.1 Patron Cards - Production and Distribution

Card stock for the patron cards has been ordered by the Army Library. Once patron labels have been produced, each can be affixed to the card stock. The label will carry the patron's name. Verification can be accomplished by running a light pen across the bar code and calling up the patron record.

Cards for libraries and certain VIP patrons will not be sent out, but rather kept at the desk. Regular patron cards may either be kept at the circulation desk until the patron claims it or sent out by library courier.

2.4.2 Periodicals

The label for periodicals will include a code number for the title. Bound volumes and individual issues will be treated the same. Bar-coding and individual issue and serial check-in will begin in January. Bound volumes may be labeled after they circulate just as monographs would be.

2.4.3 Monographs

Depending on whether a monograph is a new acquisition or an already circulating copy, it will require two or three labels. Generally, all the item activity records in a work file will be of the same type. It should be possible to indicate the number of labels required when the work file is submitted for label processing.

After the labels have been produced, they must be placed on the correct item. The call number will be printed on the labels and can be matched against the call number on the book. The first label will be placed on the inside back cover and the second on the outside back cover. If it is a new acquisition that requires a spine label, the third label will be trimmed and placed either on the spine or on the front of the book in the lower left-hand corner. The Army Library is currently using a system that requires trimming the spine label. When labeling is completed, the bar code should be scanned to check-in the item; it will then be placed on the book cart for shelving.

2.5 Recommendations for Phase 1 Conversion

Phase 1 for the conversion has three time periods: Before the computer and H-P terminal arrives, after the H-P terminal is available, and after the label printer arrives. The Hewlett-Packard terminal has been purchased, but is not installed in the Army Library. There will be at least a month's delay before a bar code printer can be leased and installed. This is reflected in the schedule of activities below:

2.5.1 Schedule of Activities

Before the terminal arrives the Army Library can and should do the following:

- Upgrade the serials tape to include ISSNs and Codens
- Continue to catalog circulating uncatalogued materials (such as Rand reports) through OCLC;
- Use the NLM computer to print out the subject headings on the archival tapes; check these headings against the authority file, and edit obsolete or incorrect headings;
- Use the NLM computer to process the archival tapes to create bibliographic records for monographs and the Army serials tape to create the bibliographic records for periodical titles;
- Distribute brochures on the new library system and collect patron registration forms.

After the Hewlett-Packard terminal is installed and the entry screens have been developed the Army Library should begin the following activities:

- Enter patron data - these are the longest records and will require more time to enter the data; and
- Create bibliographic records for
 - sections of the library with heavy use (U, V),
 - items being checked in at circulation,
 - the multi-volume titles in law and in the general collection.

Creation of activity records would require that items be removed from the shelf and stored on book carts until labels can be processed. (The alternative would involve reshelving the item after the activity record was created and then retrieving it when the label was printed. In the meantime the item could be checked out or otherwise be

(unavailable at the time the label was printed.) Since there may be a delay in securing the bar code printer it was recommended that activity records not be created until the printer arrives. The exception to this would be activity records for multi-volume sets, particularly the law items which will require extensive editing to include volumes, parts, and supplements. Since these items are used primarily within the library, they could be reshelfed after the records were created, and easily retrieved when labels became available.

After the bar code label printer arrives the work files of activity records that have been stored should be processed to produce labels. Similarly, the patron work file can be processed, labels attached to the card stock, and the cards either filed or distributed. The staff should then shift from adding bibliographic records to creating activity records and labeling items.

2.5.2 Support from Lister Hill

The Army Library expects support from LHC for the following:

- Use of the NLM computer to process archival tapes and the serials tape;
- Development of screen formats for the entry of patron, bibliographic and activity records;
- Support for the creation of a subject authority file. Specifically the software must provide that each subject heading entered, whether by screen or from archival tape, be subjected to review; and
- Support for the creation of a serials check-in module with a screen for data entry.

After the printer is installed and as weekly OCLC tapes are processed and items are labeled, the conversion will move into its second phase of day-to-day operations.

3.0 PHASE TWO: CONVERSION DURING DAY-TO-DAY OPERATIONS

Conversion during day-to-day operations involves two separate types of activities. First, new items will be acquired by the library and sent to technical services for processing. Similarly, at the beginning of the year, individual issues of periodicals will be checked in by the computer and labeled before being placed on the shelves. At the same time, unlabeled books and periodicals will be brought to the circulation desk by patrons who wish to check them out. There will also be patrons who have not registered and consequently do not have a patron card. This part of the conversion plan outlines the procedures to be followed to create records and bar code labels for items coming into the library, to permit circulation of unlabeled items, and to grant borrowing privileges to unregistered patrons.

3.1 Producing Records and Labels for New Acquisitions

The new circulation system will result in some modification of present cataloging procedures. At present the OCLC data base is checked first to see if any Army Library record exists. If it does, the shelf list is checked to determine the copy number, the OCLC record is edited to reflect the call number, and the typewriter attached to the terminal prints a spine label. Since the bar code printer will be producing spine labels, the OCLC data base need not be accessed for added copies. Therefore, for all items, the first steps will be to query the bibliographic data base using either the

ISBN or the title. If the new item is an added copy of a title already in the data base, a new activity record can be created and the item set on the cart marked "labels."

If the item is not in the data base, it may either be a new title or an item the library catalogued prior to 1974. At this point, the cataloging department has two options - it can either re-catalog the item through OCLC (or capture a cataloging record), or it can create a bibliographic record and activity record from the catalog card. There is no cost for entering a catalog record into OCLC, but it is time-consuming. Capturing a record already in OCLC costs \$.001 - .039 per record*, and the record may need to be edited. Original cataloging or extensive editing may take up to ten minutes per title. And, the items would have to be set aside until the archival tape arrives.

If the library decides it does not want to re-catalog items, the second step would be to check the card catalog to get the call number; using the call number, the shelf list card would be updated to add a copy (which is the usual procedure); the bibliographic and activity records would be created from the shelf list card. (The shelf list would be needed for subject headings and added entries). Figure 17 shows the procedure for new arrivals.

* This is the 1979 Fedlink charge per record based on the number of records, it does not include the cost of the tape or terminal use. These are regarded as fixed costs outside of conversion.

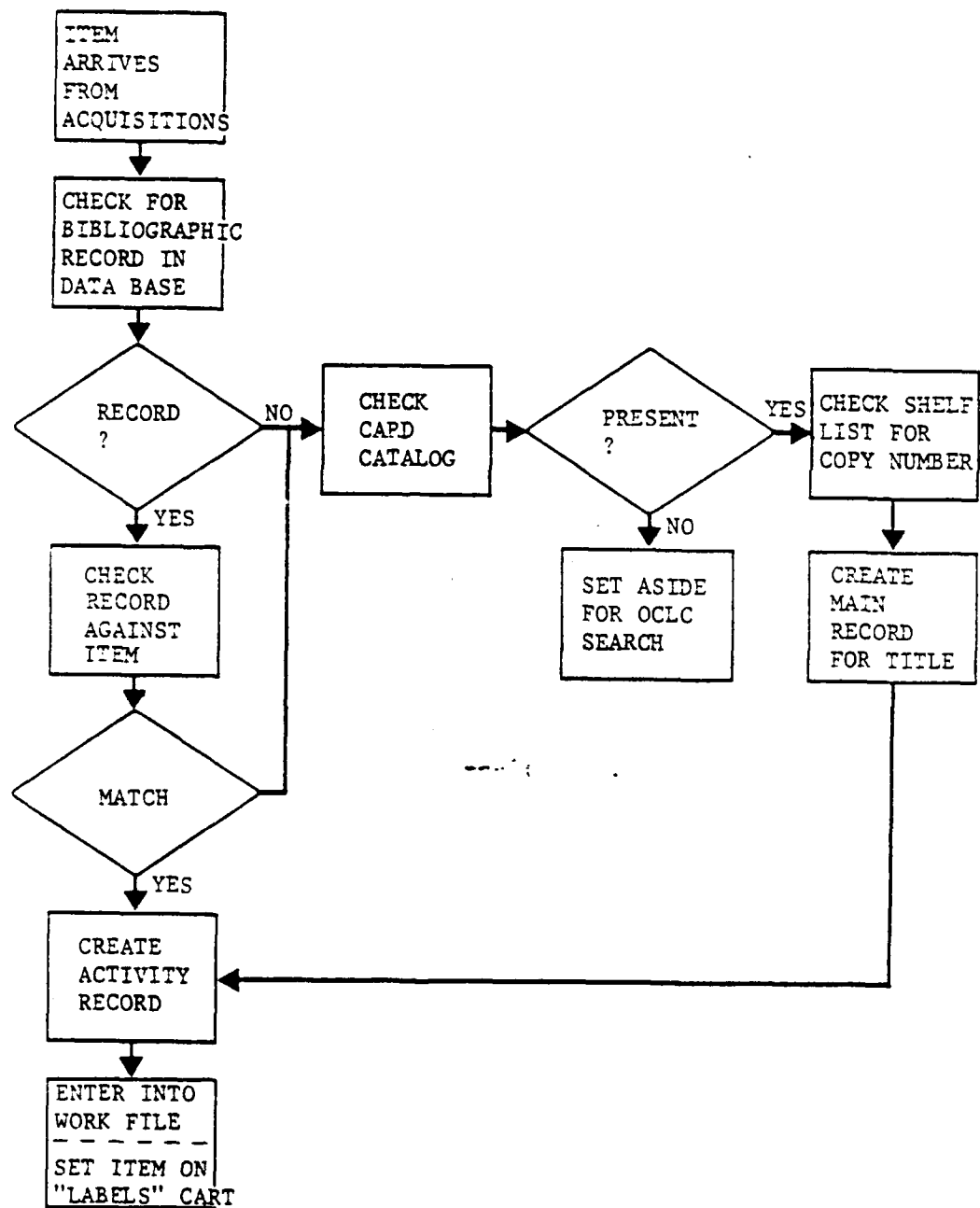


FIGURE 17
FLOWCHART FOR PROCESSING NEW ACQUISITIONS

At the end of the day's processing there would be two categories of items - those catalogued through OCLC which must be set aside until the archival tape arrives (usually the following week) and those for which bibliographic and activity records have been created. The latter items would have been placed on the "labels" cart and returned to the circulation department for labeling.

When the archival tape arrives each week it will be processed, the subject headings checked, and the bibliographic records verified. After the new records have been entered into the data base, the librarian/technician can take the items that had been set aside and create activity records. Then the activity records will be processed for labels and the items sent to the circulation desk for labeling. The circulation staff will place the labels as usual and trim a third label, which will be placed either on the spine or the front cover of the book in the lower left hand corner. The procedure for archival tapes is shown in Figure 18.

3.2 Serials Check-In

Each day newspapers, periodicals, and journals arrive in the library's mail and are routed to the periodicals section to be checked-in. Beginning in January the Army Library will check-in periodicals on the computer and produce bar-coded labels for individual issues as they come into the library. Figure 19 describes this check-in process.

It is important to remember that the circulation module does not encompass a full serials module. The serials check-in, as currently

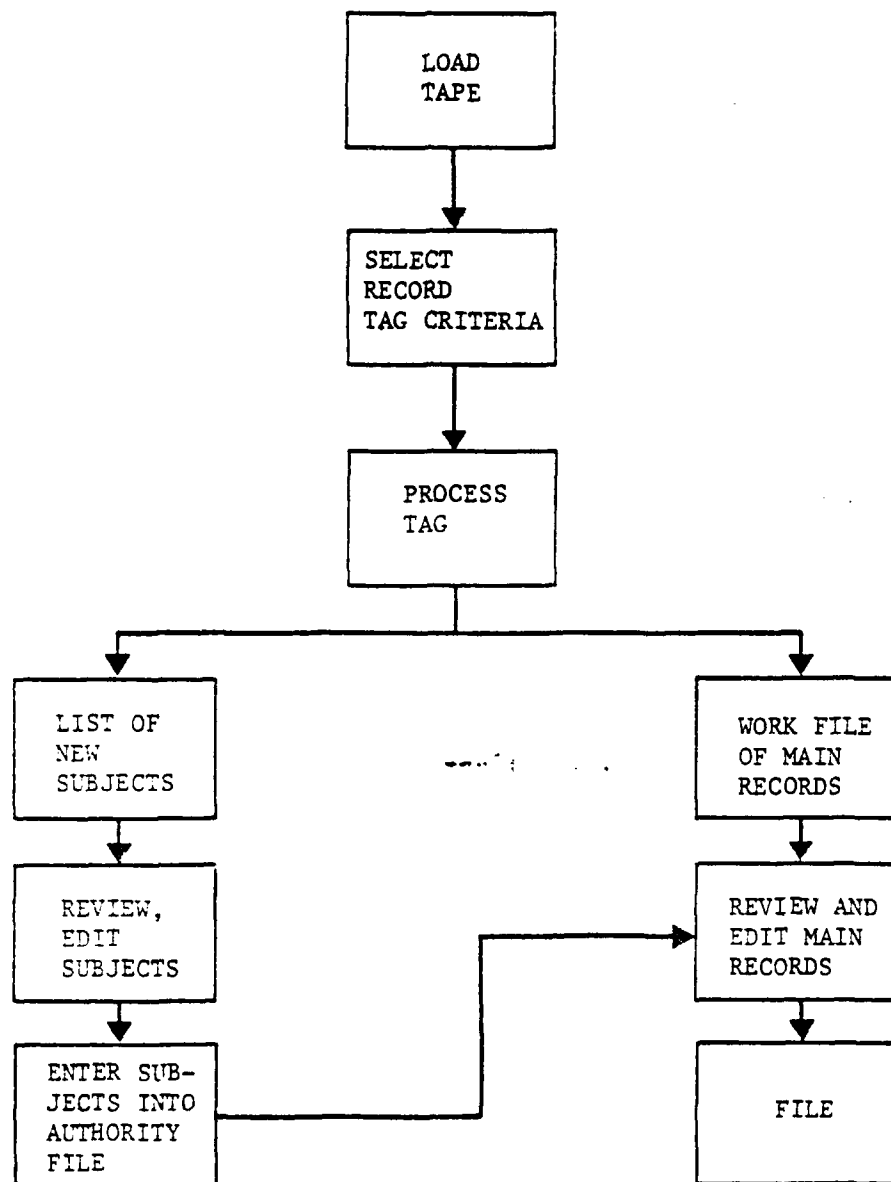
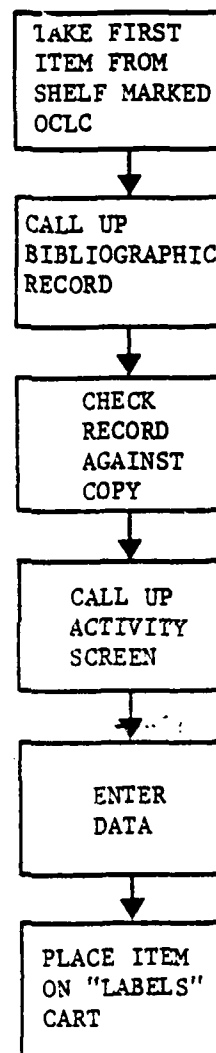


FIGURE 18
FLOWCHART FOR PROCESSING WEEKLY OCLC TAPES: STEP ONE



SENT TO CIRCULATION
DEPT FOR LABELS

FIGURE 18
(CONCLUDED)
FLOWCHART FOR PROCESSING WEEKLY OCLC TAPES: STEP TWO

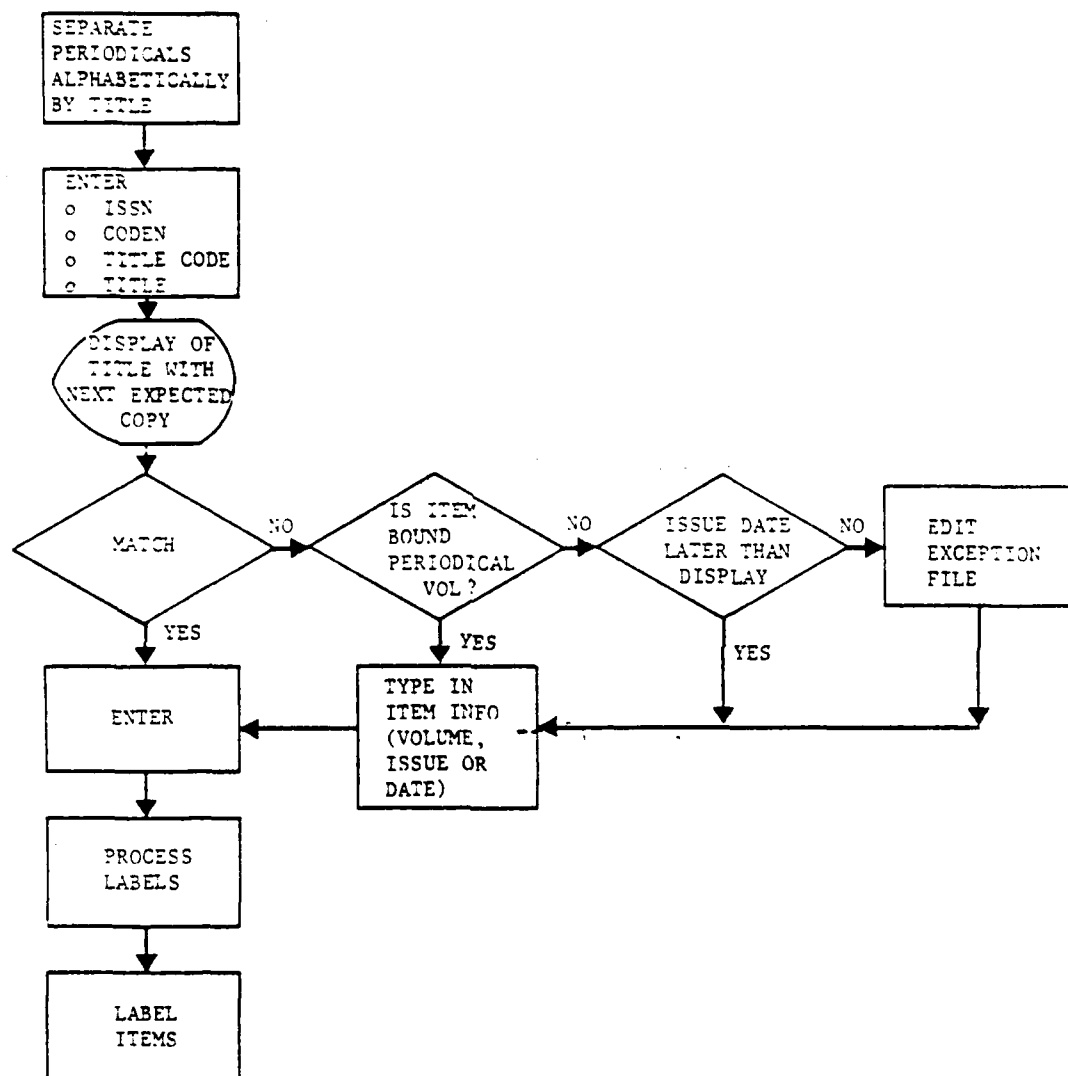


FIGURE 19
SERIALS CHECK-IN

designed, functions as follows: For each periodical title there is a bibliographic record created from the library's serials tape. The check-in procedure accesses this bibliographic record to create an activity record for the issue, a bar-coded label and; if required, an entry to the exception file; the holding statement on the bibliographic record would also be updated. Each of these steps is described in further detail below.

Access to the bibliographic record may be by ISSN, Coden, full title or abbreviated title. When the record is called up, it will display the volume, issue and copy number of the next expected item. If the item in hand matches the listing on the screen, the enter key should be pressed, this will create an activity record and enter the ID number for bar code label processing. If the item on hand and the screen listing do not match, the operator must type "no," and enter the prompted description - volume number, issue/date, and copy number.

If the volume number of the item entered precedes that listed on the screen it will be understood that this is an earlier issue; however, if it is a later issue, the information on the screen will be transferred to an "exception file." This exception file will be checked to claim missing issues.

The bar-coded number on the label will be comprised of two number sequences - the first will be a coded ID assigned to the periodical title, the second sequence will be a sequential number

assigned to that title. When loose issues are sent to the bindery or disposed of their bar code labels will be scanned to clear the register. The number can then be reused. The label, itself, will be printed with either the Coden or an abbreviated title.

3.3 Circulation Without Bar Code Labels

Whenever a system is not fully converted, the problem of handling non-labeled material rears its head. Patrons who have not registered and books without bar coded labels can sabotage an automated system.

There have been several alternatives used to handle this problem:

- a. Deny circulation - no patron can check out books and no item can circulate;
- b. Enter a record on the spot and create a permanent label; or
- c. Use a temporary ID label for non bar-coded items.

None of these is entirely satisfactory. Denial of service is not good politically, particularly for the Army Library. Since label generation in the system requires a full record (patron or item) and a separate program, it would create considerable delay at the circulation desk if a permanent label had to be generated. Temporary IDs have been used for check-out, but not without creating problems. Most libraries have used duplicate labels - placing one on the book and the other on the book card. Since it was difficult to identify an overdue item just by its number, this necessitated running a manual system of book cards alongside the automated system. There was also the danger that the book label wouldn't match the book card label. For

this reason, it was decided that labels would not be used at all; instead a free text message that would contain either the call number, title, or other descriptive information would be used. The following sections describe procedures for handling unregistered patrons and unlabeled items.

3.3.1 Unregistered Patrons

Whenever a patron comes to the circulation desk without a card, the patron file should be checked to see if he is registered. If the patron has been registered, the desk attendant can key in the name, locate the record, and continue the check-out process. If the patron has not registered, he should be given a registration form. While the patron fills out the form, the desk worker can enter an abbreviated record consisting of the patron's name and work address. The item bar code labels would then be scanned and the transaction would be complete. The registration form would then be checked for completeness and legibility and batched with any other completed forms for record entry.

Later, when the patron record is called up, the partial record will be completed, and the item ID's transferred to the permanent record.

3.3.2 Check-Out of Unlabeled Items

In the typical check-out, first the patron's ID would be scanned and then the label for each of the items he wishes to check-out. During this phase of conversion a patron may select both labeled and

unlabeled items. The first step at check-out is to separate the unlabeled items. The attendant would then scan the patron ID and the item ID's as usual; when this part of the transaction has been completed, he would indicate that he wished to enter a free text message. He would then key the call number of a book or the title, issue number (or date), and copy number for a periodical. To facilitate entry of several unlabeled items there should be prompting for further entries. Pressing the "enter" key will complete the transaction and return the terminal to the check-out mode. Neither a bibliographic nor an activity record will be created until the item is returned by the borrower. Figure 20 illustrates the check-out process.

3.3.3 Checking in Unlabeled Items

Books and other items are returned to the Army Library through a book drop from the outside corridor into a bin or truck next to the circulation area. The circulation desk itself has two built-in book drops. A few books are left on the circulation desk and others that have been sent out on interlibrary loan are returned by mail or by messenger.

Figure 21 shows the procedure for checking in items during Phase 2 of the conversion and Figure 22, the procedure after conversion is complete. The procedure is complicated by the fact that issues of periodicals prior to January will not be labeled and that some overdue items will be returned that were checked out through the manual system.

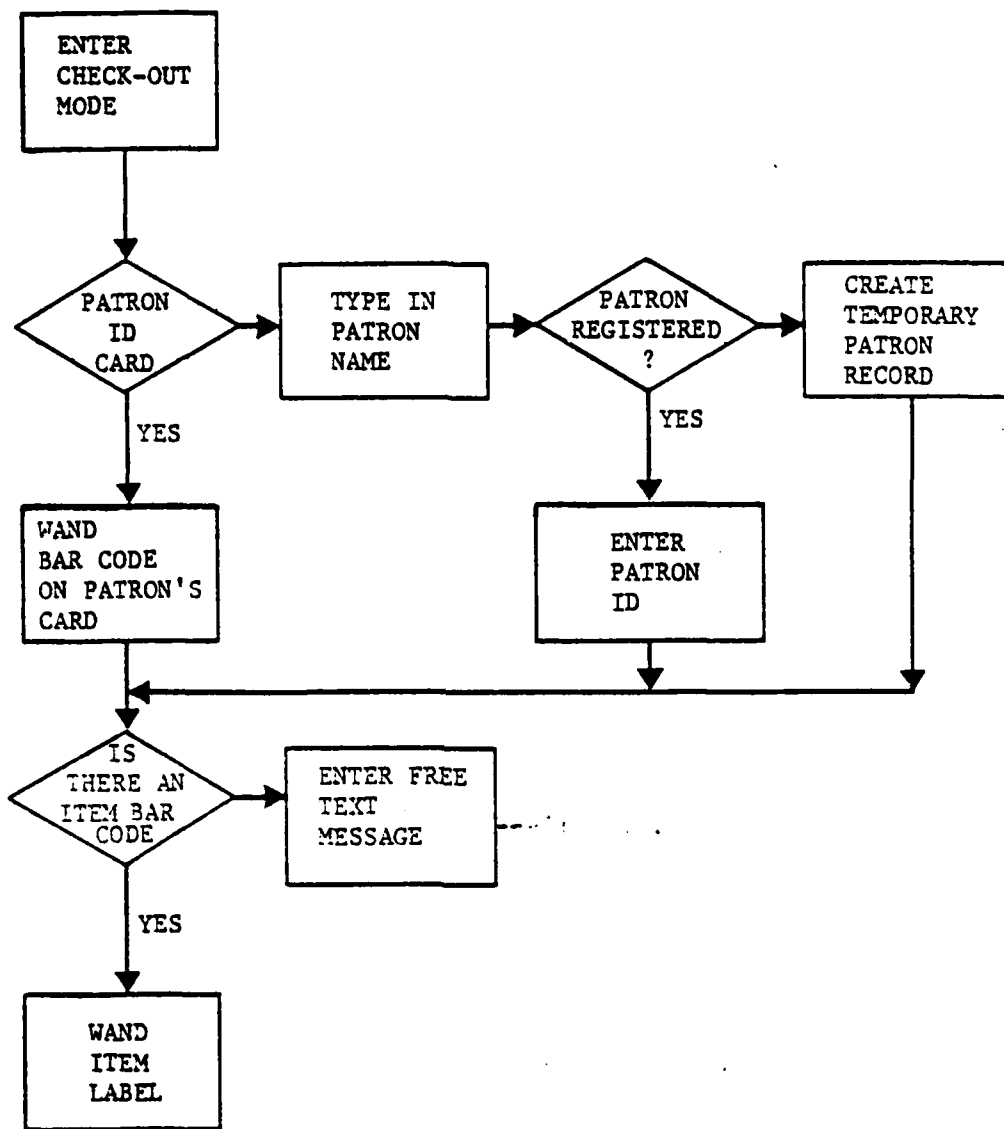


FIGURE 20
FLOWCHART OF CHECK-OUT PROCESS DURING CONVERSION

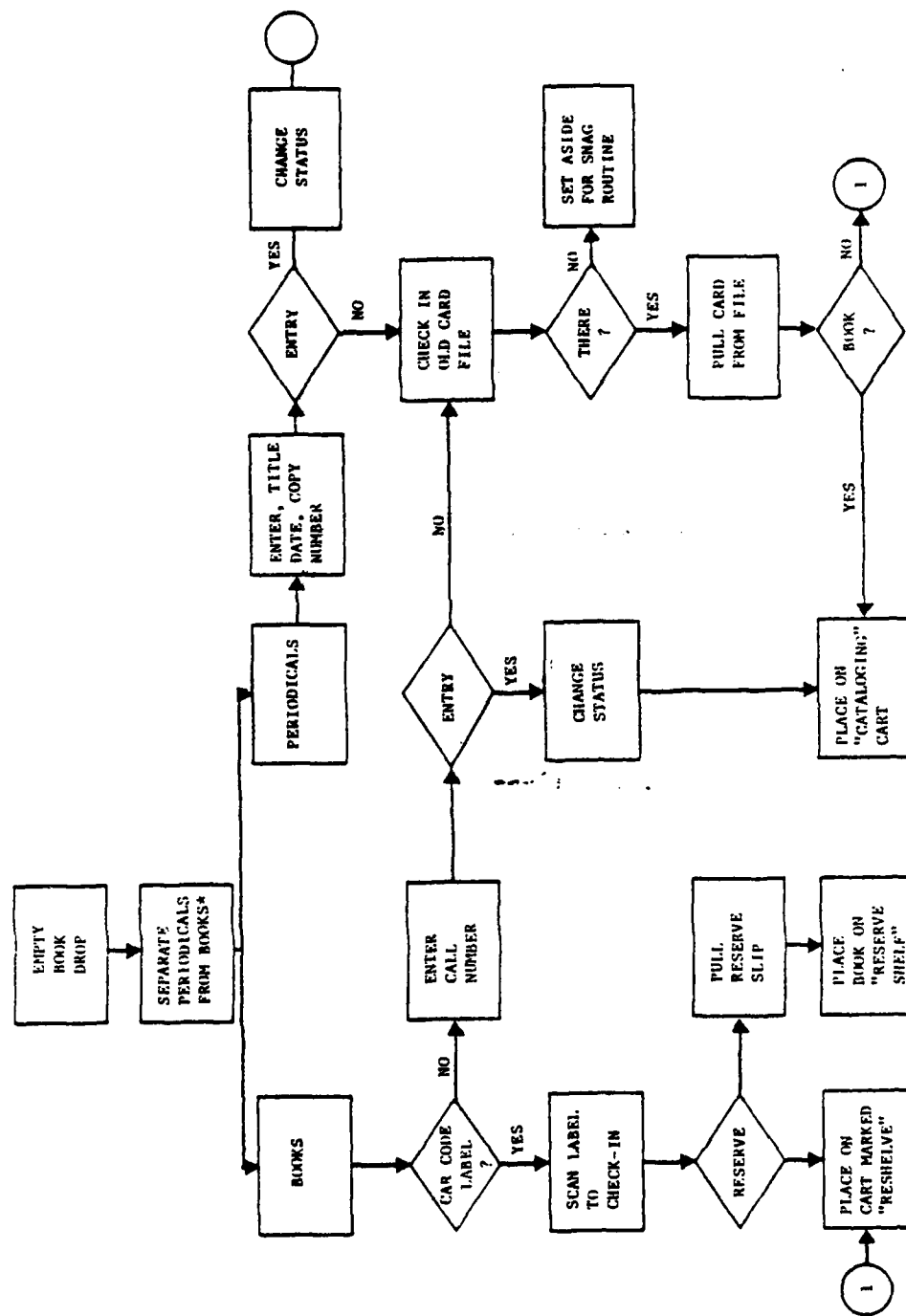


FIGURE 21
FLOWCHART OF CHECK-IN PROCESS DURING PHASE 2 CONVERSION

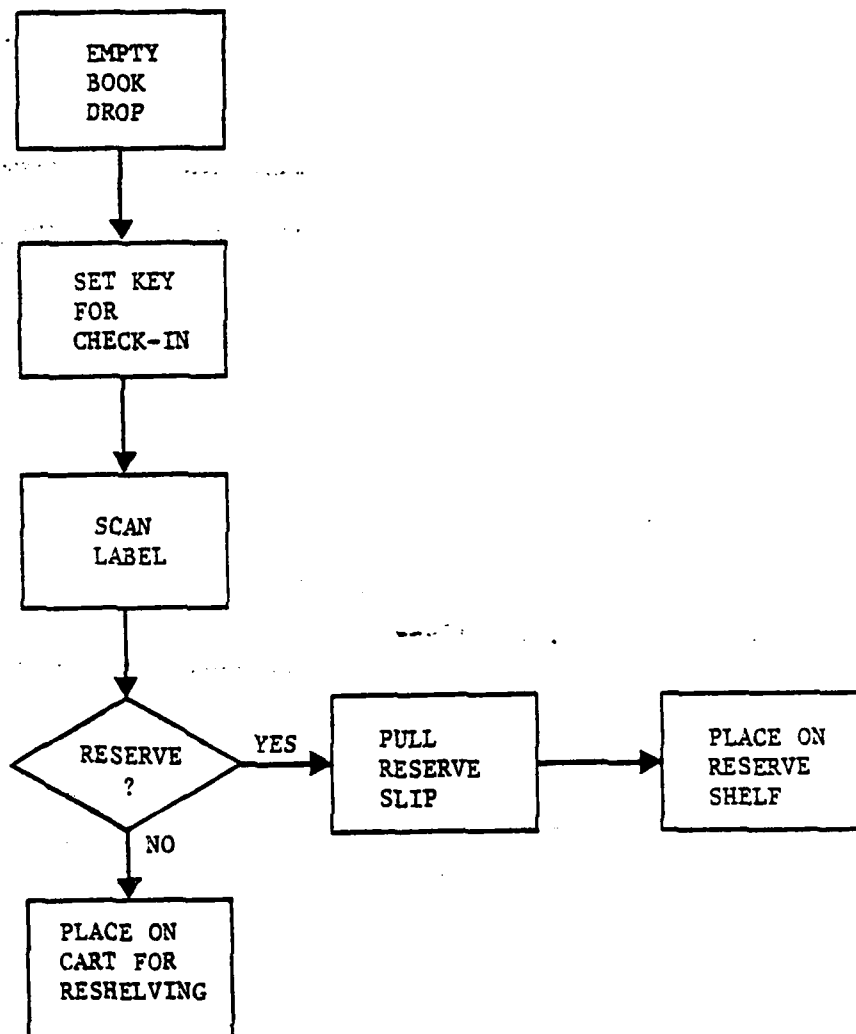


FIGURE 22
FLOWCHART OF CHECK-IN PROCESS AFTER CONVERSION

When the book bins are emptied, the first task is to separate labeled items from unlabeled ones without reference to the type of material. Items with bar code labels can be scanned to check them in. If a reserve has been placed on a book the terminal will indicate that fact and direct the printing of a reserve notice. The item would then be placed on a shelf marked "Reserves" as is done under the current system. The printed reserve notice could be mailed out or placed in the book as a reminder to call the patron. Items without reserves would be placed on the truck for reshelving.

For those items without bar-coded labels, the process is more complex. The manual card file and the data base are checked. Which should be checked first depends on how long the system has been operating. For the first month the card file probably should be checked first. To locate an item, either the call number or the title information must be entered; when the record is located, the status can be changed and the item placed on a cart marked "labels" and brought to the cataloging section.

Figure 21 traces the flow of unlabeled items brought from circulation. If a bibliographic record for a title exists, an activity record will be created and entered into a work file for label processing. The item itself will be replaced on the "label" cart. If no bibliographic record exists the item may be set aside for cataloging through OCLC or the technician may call up the entry screen for a bibliographic record. Once the bibliographic record has

been entered an activity record can be created. Items placed on the "label" cart will be returned to the circulation desk and those catalogued through OCLC set aside until the arrival of the weekly tape. The labeling of items by the circulation department will follow the usual procedures.

3.4 Recommendations

The principal concerns during this phase of conversion are the possible backlog of items in cataloging and the accuracy of record entry and label assignment. Accuracy can be improved in several ways; one of these is by building a system with prompts and menu selection. The following are some areas where this type of help may be needed:

- Check-out - a help button pressed here might ask "Is there a patron without an ID?" In the middle of a transaction a "help" might ask if an unlabeled item is to be checked-out. If the answer is "yes", the terminal should prompt for call number or title. When that has been entered it can prompt for additional items.
- Check-in - There are two problems - locating free text entries and flagging reserves. A reserve flag could generate an immediate notice on the Centronics printer that could be slipped with the book.
- Serials check-in may require a menu for the selection of a journal title (there are no standard abbreviations for all titles and key strokes should be minimized) and prompting for the item information.
- Serial titles and multiple copies - As mentioned in Chapter 2, entry of repetitive information should be avoided. A prompt might ask the number of copies for which activity records were being created.

- When a work file is submitted for label processing there must be a prompt as to the number of labels per item to print. (1 for patrons, and serials or 3 for all monographs)
- It would also be useful to have information on when a work file would be processed so labels could be picked up and not left to accumulate.

The Army Library too can help maintain accuracy. Training is very important, but there are other things as well.

- Be certain there are enough book carts plainly marked and assigned to specific places.
- Rotate assignments. No one should spend all day with labels or more than two hours at the terminal.
- Keep work files to a manageable size, perhaps no more than 20-25 items at a time.
- Have the staff plan their schedules for record entry and labeling and be prepared to change it. As the people become accustomed to the system, a pattern will set in: Tapes will arrive on Tuesday, for example, and all day Wednesday will be spent creating activity records for items on that tape. Serials may be checked in early in the morning and labeled in late afternoon to maintain the current one day turnaround.
- Be flexible - if a procedure isn't working, develop a new one.

4.0 PHASE THREE - RETROSPECTIVE CONVERSION

During Phase 1 and 2, bibliographic records will have been created for periodical titles, for monographs catalogued after 1974, for all new acquisitions, and for items that had previously circulated. Activity records will have been created for all circulating items.

If the bibliographic file is to be useful for reference, it must be complete. Further, if management statistics on the composition of the collection, its distribution, and patterns of use are to be meaningful, non-circulating items must be included. Finally, if the library intends to develop the circulation system into an inventory system, all items must have a record and barcode label. The task of labeling those non-circulating items is the retrospective conversion.

4.1 Materials to be Converted

Essentially there will be four classes of material not included in the data base or for which activity records have not been created:

- uncatalogued documents,
- bound periodicals,
- older non-circulating monographs, and
- reference books.

4.1.1 Uncatalogued Documents

Uncatalogued items present the greatest problem. Some are uncatalogued because vital information is lacking. Few reports are likely to be in the OCLC or any other data base; not many libraries collect or catalog the "Report of the Secretary of the Army on . . ."

Nor will technical reports be catalogued in OCLC. This is not a task that can be done by technicians; it requires a professional cataloger.

4.1.2 Bound Periodicals

Once the bibliographic record for the title is created, the creation of serial activity records is very simple. The conversion of bound periodicals might be started during Phase 1 if there is time.

4.1.3 Older Monographs

Monograph records can be captured through OCLC or created from information on the card catalog/shelf list. There are two ways to convert. One way would be to take a shelf at a time, remove all items without labels, and process them. An alternative would be to use the shelf list. The choice would depend on the accuracy of the shelf list and the percentage of items in that category that have already been labeled. For example, if nothing in the Zs has been labeled, it might be easier to use the shelf list. On the other hand, if only a few items per shelf have not been labeled, it is easier to retrieve them for processing.

4.1.4 Reference Books

Records for reference books may be necessary because they circulate outside the library for overnight use and because the library would like statistics on their in-house use. Most of these items are catalogued and, except for volume, they do not present a problem.

4.2 Alternatives to Original Cataloging

The staff at the Army Library estimated about twenty minutes would be needed to do original cataloging through OCLC. Assuming the Army Library follows the usual pattern, 25% of its collection will account for 90% of the circulation. The end of the first year may find thousands of items without any kind of record.

If the library feels the task of retrospective cataloging is too great to be done in-house, there are several options.

- the records could be captured through OCLC;
- the shelf list could be photo copied and sent to a company that specializes in loading data bases; and
- the services of one of the library data bases (like BNA) could be used.

If the title has been catalogued by OCLC, this is probably the cheapest method. The charge to the Army Library would be \$.025 for each title search and between \$.001 and \$.039 for each record copied.* The disadvantage is that library personnel would have to search, edit, and process the records.

The second alternative of using a company specializing in data entry is fairly expensive; \$1.65 per title is the figure cited in library literature. There is also a greater probability of error since non-librarians would be entering the data and shelf lists are frequently inaccurate.

* FEDLINK charges exclusive of tape.

The third alternative would be to use the services of a company like Blackwell North-American (BNA) which did the conversion for the Tacoma Public Library. At this time other companies with large data bases have not entered the conversion market (Baker and Taylor, for example). This picture should change rapidly. BNA offers everything from full service (they access, edit and send a tape) to simply making their data base available. Costs per record are dependent on the number of searches, the number of hits and the amount of service they perform. A company like BNA (and this should not be considered an endorsement) is attractive if the following is true:

- Full service of searching and editing is needed because of lack of trained personnel;
- There is a good match between their data base and a sample of the collection. (The sample is free); and
- There is a large enough number of titles to convert to bring down the unit costs.

Alternatives 2 and 3 require investigation and careful negotiation.

If the task of retrospective conversion cannot be undertaken because of a backlog in the cataloging section, these alternatives should be further explored.

4.3 Recommendations

Assuming that retrospective conversion will be done in-house, the following should be considered.

- Set aside a specific time each week for retrospective conversion;
- Have a plan. It should include a schedule of how much should be accomplished weekly;

- Identify sections of the library with heaviest use on the basis of circulation statistics and concentrate conversion efforts there;
- Use the retrospective conversion as an opportunity to correct the shelf list and to weed the collection. Before an item is entered into the data base examine its past circulation history and assess its continued usefulness to the collection.

5.0 TRAINING

Training for the automated circulation system includes a general orientation, demonstrations of equipment and procedures, and self-checking exercises. Materials will be developed by the Army Library.

5.1 Orientation

The library staff has been involved in the design of the system. Various pieces of equipment have been demonstrated to the staff. The librarians also have taken a field trip to the Martin Luther King Library to watch check-in/out processes, and record entry.

5.2 Demonstrations

After the equipment has been installed there will be a series of demonstrations on the following:

- light pen use;
- terminal;
- record entry - 2 sessions;
- searching the data base;
- labeling items; and
- circulation functions - check-in/out, reserves, entering message or free text.

5.3 Self-checking Exercises

The Army Library would like to create a set of exercises to be performed on the terminal and with the light pens. Using the small data base created for system debugging, the staff could practice changing an item's status, entering records, etc. This programmed instruction would be especially useful for training new staff members and giving them confidence.

6.0 SUMMARY

Table V gives a summary of activities across the three phases of conversion. Several critical areas have been identified.

Equipment

1. A second H-P terminal should be purchased in time to be of use in conversion.
2. The bar code printer should be leased as soon as possible.
3. In the absence of the Army Library computer, NLM/LHC equipment should be used to process the OCLC and the library serial tapes.
4. An H-P terminal should be available soon after the tape is processed to permit editing of the authority file and bibliographic records.

The lack of equipment in Phase 1 will seriously undermine the conversion effort.

Procedures

It is suggested that procedures not be implemented at the same time, particularly not in the early weeks when the operation begins. Each procedure should be given time to shake out problems. The following order of implementing procedures reflects the additional time needed to assure smooth operation.

1. Start with OCLC tape processing procedures. This is a weekly procedure, not daily, and it will take a longer period of time to fit into the daily and weekly activity of cataloging.
2. Once the bar code printer is available, the cataloging section may want to separate the new items into new titles and previously catalogued titles and use the bar code printer to produce spine labels.

TABLE V
SUMMARY OF CONVERSION ACTIVITY

	TASKS DURING CONVERSION		
	Phase 1 - Preparation	Phase 2 - Day-To-Day	Phase 3 - Retrospective
Equipment & Site Preparation	Phone Lines to NIM Purchase Hewlett-Packard Terminal Lease Barcode Printer Purchase Light Pens Purchase Card Stock, Label Tape Prepare Computer Room Rearrange Furniture In Circulation Area, Periodicals, and Cataloging Sections		
Building Data Base			
a) Patron Records	File in Compliance with Privacy Act Design Registration Forms Input Patron Records	Input New Patron Records Renew Patron Cards Replace Lost Cards	
b) Monographs	Process OCLC Archival Tapes Process Weekly Cataloging Tapes	Process Weekly Cataloging Tapes Create Records for Circulating Items	Create Records for Non-Circulating Monographs
c) Serials	Upgrade Library Serials Tape	Begin Serial Check-In, Bound Periodicals as They Circulate	Create Activity Records For Bound Periodicals
d) Activity Records (Other than Serials)	Before Printer Arrives - For Multi-Volume Sets Only After Printer - Circulating Items	Weekly OCLC Tapes Circulating Items	Items with Bibliographic Record Items Catalogued in Retrospective Conversion (Inc. Reference)
Labels	Patron Cards Multi-volume Sets Circulation Items as They Are Checked-In	New Titles - New Patrons Circulating Items Periodical Issues	Bound Periodicals Reference All Remaining Items
Training	Visit To A Working System Demonstration: Light Pen, Printer, Etc. Exercises Users Manual		

3. After processing of new acquisitions is settled, attention can shift to the creation of activity records and labeling. This requires coordination between circulation and cataloging and considerable movement of material.
4. Serials check-in must begin January 1; this starts a new volume number for most periodicals.

Considering the delay in acquiring equipment the objective should be a March 1 start-up date. This is needed to create the data base and to shake down procedures. Figure 23 projects a schedule of activities based on a target date of March 1.

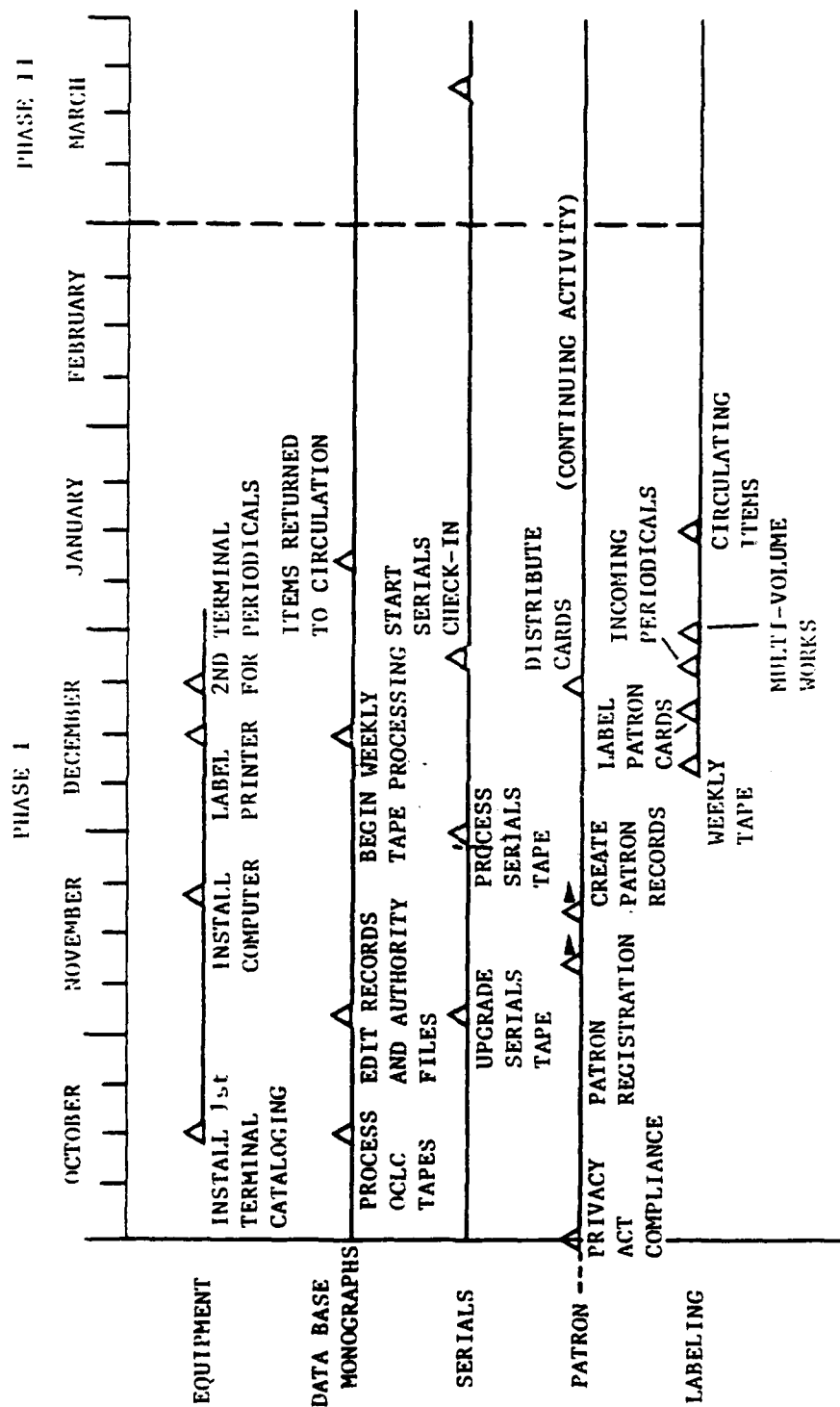


FIGURE 23
SCHEDULE OF ACTIVITIES

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